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AUG 20 1928

# MOTOR AGE

A Chilton Class Journal Publication  
Published Weekly      August 16, 1928

## AUBURN

POWERED BY LYCOMING

When a motor car has  
individuality and sales  
appeal —

And outstanding perform-  
ance and inbuilt quality —

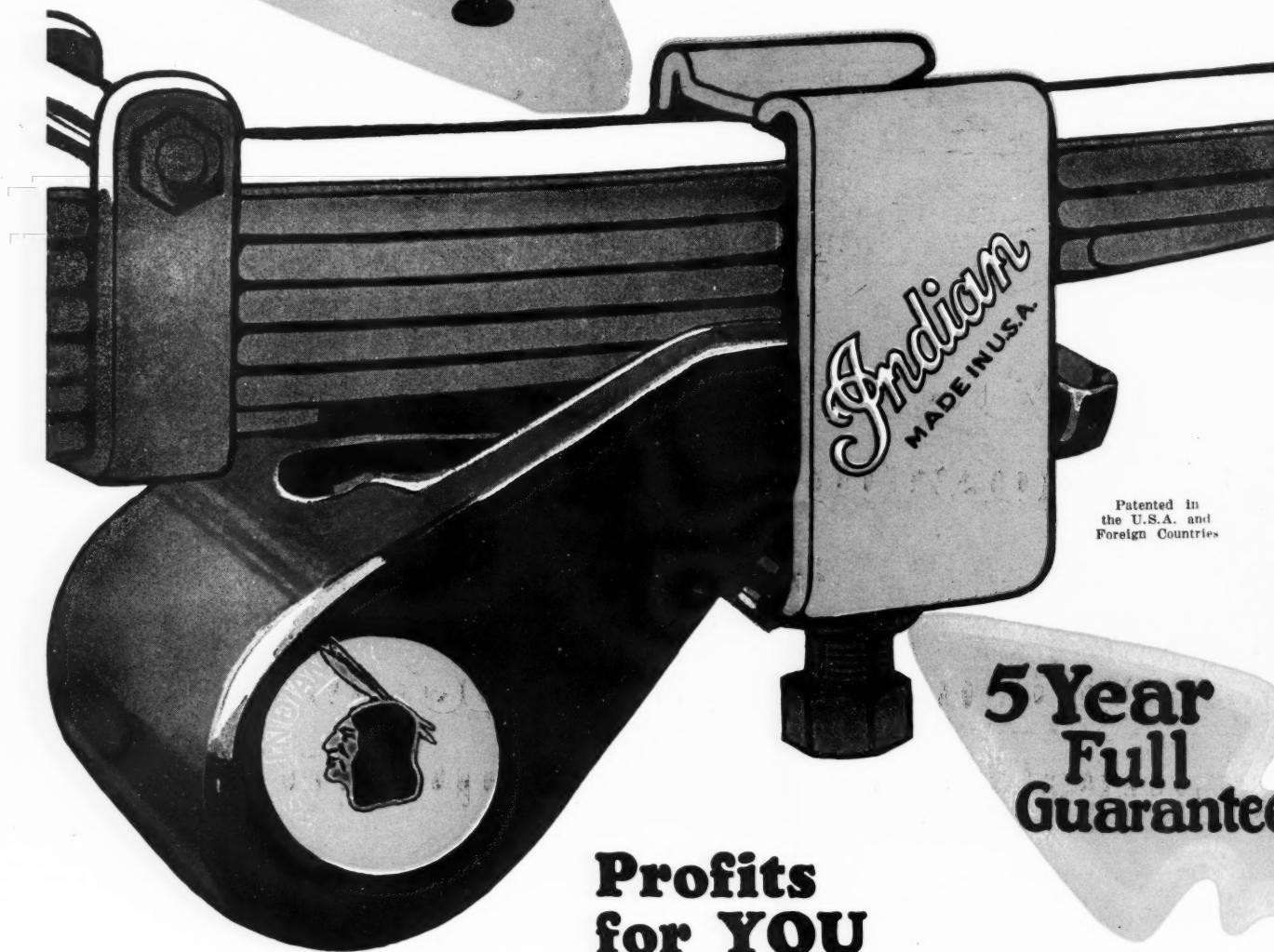
At a low price —

You can buy your used cars  
at proper prices.

Auburn Automobile Co., Auburn, Indiana

**\$15  
a set  
of 4**

*Indian*  
**AUTOMOBILE**  
*Shock Absorbers*



**Profits  
for YOU**

Every set of INDIANS sold means six dollars clear profit for you. And no investment—our 74 to 1 Plan tells how to handle INDIANS without investing one cent of money.

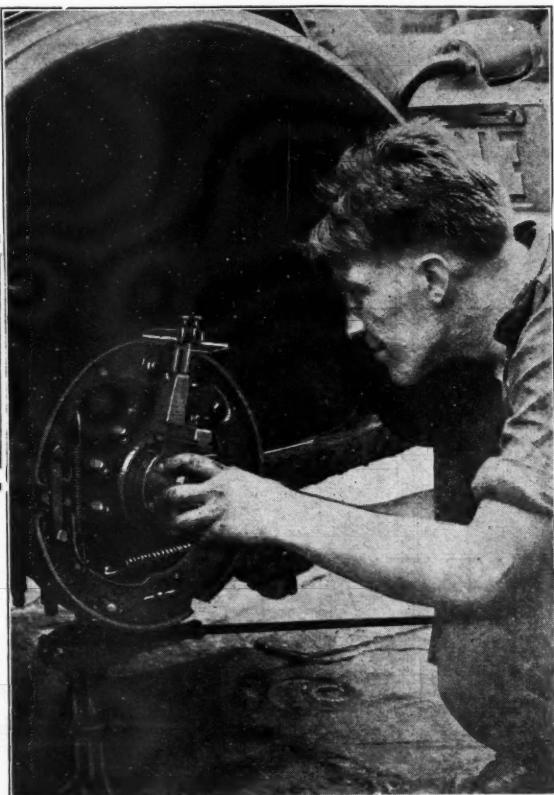
INDIANS are easy to sell—Free Trial Offer and 5-Year Guarantee. Where can you beat that proposition?

Easy to install, too. INDIANS can be put on in 20 minutes with no tool but an ordinary wrench.

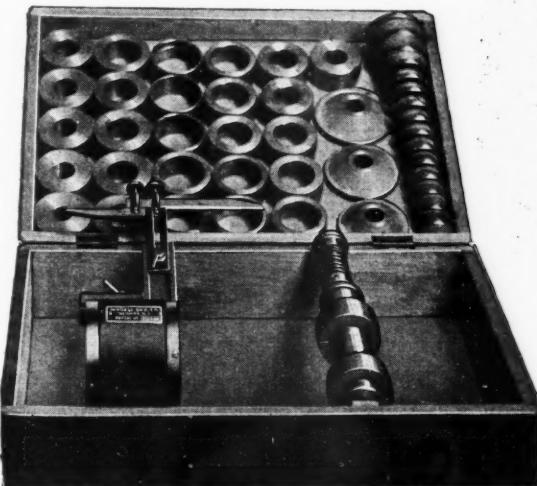
Dealers all over the country are pushing INDIANS. Thousands are being sold each week. You too, can sell them and make six dollars profit on every sale.

Write today for the detailed plan.

**Indian SALES CORPORATION**  
Subsidiary of  
*Indian Motocycle Company*  
SPRINGFIELD, MASS., U.S.A.



All that the name implies  
**"TRUE VISION"**



**Universal Gauge** complete, packed in handy and serviceable cabinet with all bushings compact and readily accessible to fit all cars.

There is also a Wadell Gauge for car dealers, which includes special fittings for the cars they service.

The WADELL true vision Brake and Drum Gauge is designed and manufactured to enable brake service stations, garages and car dealers to turn out perfect brake adjustment without the necessity of the customer repeatedly coming back for "hit-or-miss" readjustments.

Inspect and size the drum, adjust the lining to a circle conforming to the drum before replacing the wheel. In no other way can internal brakes be properly adjusted that will attain and keep the good-will of the customer.

Here is a simple, inexpensive and complete, precision instrument that should be found in every shop that relines brakes. Easily and readily applied on either front spindles or rear axles, it will eliminate policy re-adjustments and complaints and will keep your customer from "trying someone else for their next job."

Pave the way for better brake service, write today for prices and a complete description of this new shop equipment.

## WADELL ENGINEERING CO.

## Newark

N. J.

*Makers of the Nationally Known Wadell Bearing Fitting and Brake Drum Grinding Equipment*

## WADELL

## True Vision

## **BRAKE AND DRUM GAUGE**

# Will You Accept the Judgment of the Automobile Industry on AUTOMATIC Motor Protection?

**T**HREE is no longer any question about what the automobile manufacturer is doing to stop the damage of cold.

There should be no question about what you as dealers must do—if you propose to take advantage of the manufacturer's endorsement. You must sell Pines Automatic Winterfront.

Here is the evidence: *Automatic Motor Protection* is now standard equipment on Hupmobile 8, Cadillac, La Salle, Lincoln, Pierce-Arrow and other fine cars.

In the matter of prestige, this array of leaders leaves little more to be desired.

In the matter of numbers, it means that the big production cars that you depend on for volume are yours to equip with Pines Automatic Winterfront.

Every development of the past, started by the leaders in this industry, has resulted in a landslide for the dealers who have been far-sighted enough to take



advantage of it. The public demands what these cars have.

They had their choice of two ways of motor protection. The first—a way that leaves the vital operation to memory and guesswork. The second—a positive, dependable, *automatic* way that works always with scientific accuracy.

They chose the *automatic* way. The public will follow. As a car or accessory dealer—you know what that means.

Pines Automatic Winterfront is the shutter you must sell to meet the demand. It is the only *automatic radiator shutter* on the market. Thermostats are guaranteed.

The big Pines Winterfront national advertising campaign will tell the world about this decision of the industry. Get lined up with your Winterfront distributor early this year. Don't miss a single Pines Automatic Winterfront sale.

**PINES**  
**WINTERFRONT**—*It's Automatic*

**PINES WINTERFRONT COMPANY, 410 North Sacramento Blvd.  
CHICAGO, ILL.**

*Wholesale distributing connections everywhere. Write us for name of your nearest distributor.*

# MOTOR AGE

Vol. LIV

Reg. U. S. Pat. Off.  
Established

No. 7

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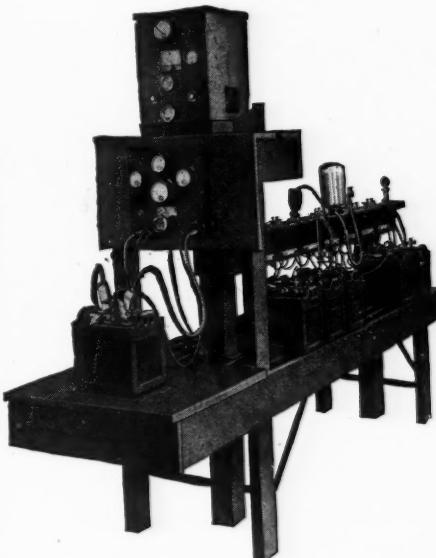
# DRIVE IN 1 STOP SERVICE STATION

Gas—Oil—Greasing—Car Washing—  
Brake Service BATTERY CHARGING & SERVICE Tire Service

## This is the Modern Trend

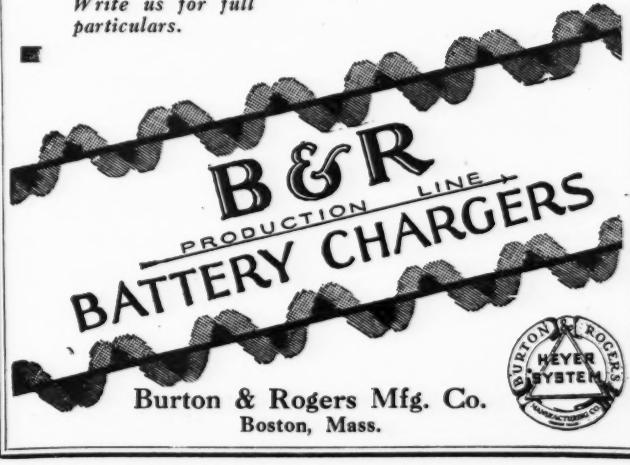
This is What Your Customers Want.  
Are you going to give it to them?  
You **MUST**—to enjoy the profits that belong to you.  
Here's ONE DEPARTMENT that will pay.

### The B & R Battery Servicer



Consists of:  
B & R Battery Charger (4 types available).  
Selective Capacitor tester (tests battery cells).  
Cadmium Test Meter.  
Special connections to batteries on line with SHURO connectors.  
Heavy Bench accommodating 16 batteries.  
Nothing else to buy, simply connect it to electrical service and set it to work.  
Occupies 25 sq. ft. of floor space.

Complete in every detail.  
Price—from \$202 to \$275.  
Write us for full particulars.



*It pays to handle  
the NORTH EAST  
Hot-Hed  
*The Matchless Lighter**

HERE is the liveliest automotive accessory proposition on the market today. No installation or service expense. Every motorist who sees or hears about this Hot-Hed wants one.

*And here's how he sees  
and hears about it!*

**Saturday Evening Post Advertising!** Starting with the July 14th issue, compelling Hot-Hed copy appears regularly. This creates real prospects.

**Window Banners, Posters, Window Stickers!** Colorful banners 60" x 14", 6 color posters 20" x 30" and window stickers are furnished you to tell the public you sell Hot-Heds.

**Demonstrator Stands** that operate from a light socket, enabling customers to try the Hot-Hed in your store. This insures many sales.

**Attractive Cartons and Boxes!** Hot-Heds are packed in an eye-arresting carton for ready display on your counter.

**Folders** imprinted with your name and address to enclose with your mail.

**Stickers** to attach to your letters and envelopes.

Hot-Heds sell at \$2.50 with a generous profit for you. Take advantage of this fast selling accessory and order a supply from the nearest North East Distributor today.

**NORTH EAST SERVICE INC.**  
Rochester  New York  
*Service Stations throughout the world*

# STUDEBAKER SPOKE

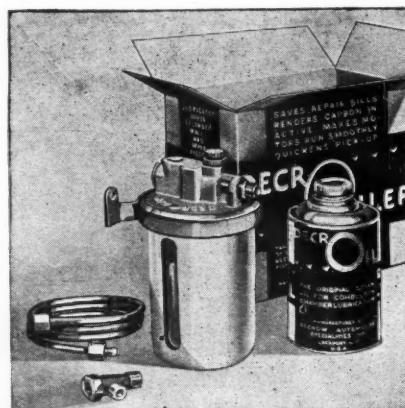
**-and the Public Answered**

## **JULY SALES GAIN 40%**

*crowning 11 consecutive months  
of sales increase.*

*Always a sound franchise, today  
Studebaker offers a money-making  
proposition which is becoming in-  
creasingly valuable to its dealers.*

THE STUDEBAKER CORPORATION OF AMERICA  
South Bend, Indiana

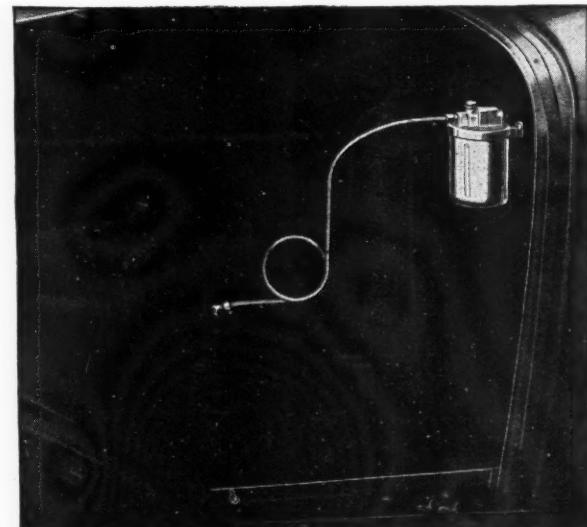


# *Every Decro-Oiler you sell brings you Repeat Business for Decro-Oil!*

THE Decro-oiler is more than just a profitable piece of equipment—it is a repeat business that not only brings each buyer's friends to the dealer for a Decro-oil installation, but keeps them coming for additional oil. You take a generous profit both ways—on the Oiler and on the oil.

You will find the Decro-oiler easy to talk about, easy to explain how and why it makes motors start easier, quickens pick-up, adds power, speed, and long life to motors—and most important of all—why it renders carbon inactive, eliminates stickiness in valves, saves money on repairs.

Don't let the profit-making possibilities of the Decro-oiler and Decro-oil slip by you. Write now for complete information.



The Decro-oiler puts a fine spray of special penetrating Decro-oil into combustion chambers through the intake manifold. Thus it takes lubrication where it is needed most—right where you've never had adequate lubrication before—right to the upper cylinders, rings and valves. Complete, \$8.50.

DECROW AUTOMOTIVE SPECIALTIES, INC., LOCKPORT, N. Y.

# DECRO<sup>®</sup> OILER

# Country-Wide Bearings Service



EVERY dot on the map represents one or more distributors who *stock* New Departure Ball Bearings.

That is why any automobile service station—in the big cities or at the cross-roads can now get the bearing it wants—*quickly!*

United Motors Service, through its 23 control branches and 800 authorized distributors at strategic locations has perfected a bearings

field service that is fully as good as the bearing.

It will pay you to know the distributor nearest to you. He is also equipped to supply other standard parts and accessories promptly.

Write the New Departure Company or United Motors Service at 3044 West Grand Blvd., Detroit for a complete list of these distributors, also copies of the Automobile Service Station Manual and Service Catalog. Free for the asking.

## New Departure Ball Bearings

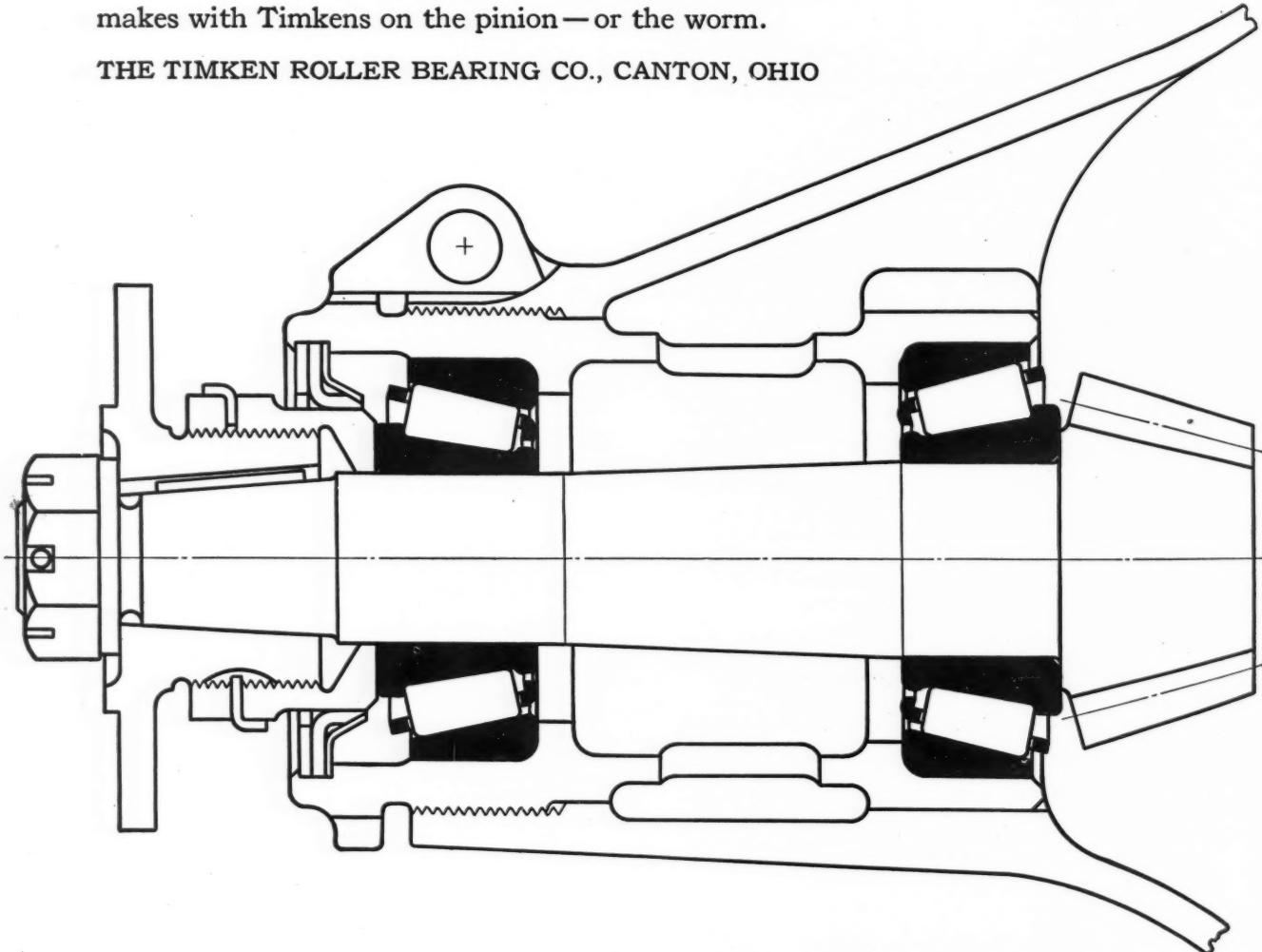
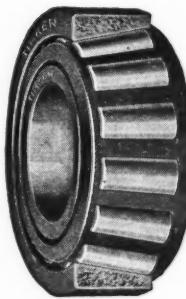
The New Departure Manufacturing Co.  
Bristol, Connecticut  
Chicago • Detroit • San Francisco

*And then another noted car manufacturer went to Timken-equipped pinions!*

For his scientific, competitive tests showed him that Timken Bearings doubled pinion rigidity! The radial and thrust capacity of Timken Bearings and their greater load-carrying area gave him twice the protection against wear and noise.

Modern engine speeds and road speeds call for "more than anti-friction bearings" on the pinion. It takes the durability made possible only by Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS*, and Timken-made electric steel. Engineering opinion confirms this—see the long and distinguished list of makes with Timkens on the pinion—or the worm.

THE TIMKEN ROLLER BEARING CO., CANTON, OHIO



**TIMKEN**  
*Tapered*  
**ROLLER BEARINGS**

# MOTOR AGE

VOLUME LIV

Philadelphia, August 16, 1928

NUMBER 7

## Studebaker Puts on Another Run

A.A.A. Checks Stock Cars at Better Than 60 m.p.h. for 30,000 Miles

## FOUR IN TEST

SOUTH BEND, Aug. 11—Announcement of new endurance and stamina records for fully equipped stock cars established by the Studebaker President Eight in traveling 30,000 miles in less than 27,000 minutes, has been made by the Contest Board of the American Automobile Association. The run, which was made on the Atlantic City Speedway between July 21 and Aug. 9, was timed, checked and supervised by officials of the A.A.A., who also certified to the stock design of the cars.

Four Studebaker Presidents participated in the 30,000 mile run and each covered the distance at better than a mile a minute average speed. Two stock President Roadsters each completed 30,000 miles in 26,326 minutes and 26,329 minutes, thereby establishing averages of 68.37 and 68.36 m.p.h. for 19 nights and 20 days continuous driving. Two stock President Sedans each finished 30,000 miles in 28,057 and 28,128 minutes. Their averages were 64.1 and 63.9 m.p.h. respectively for the total run.

### Brown Bank Director

DETROIT, Aug. 11—Guy C. Brown, vice-president and secretary of the Campbell-Ewald Co., has been elected to the directorate of the Metropolitan Trust Co. of Detroit.

### Gartley Advanced by Willys

DETROIT, Aug. 11—Willys-Overland has promoted Perry C. Gartley to regional sales manager with headquarters at the home office in Toledo. Since 1926 Mr. Gartley has been manager of the Willys-Overland branch in Detroit.

### Graham-Paige Adds Two

DETROIT, Aug. 14—Graham-Paige has announced the addition of two handsome bodies of unusual type, a five-passenger coupe and a two-door phaeton, to its line of four-speed models. The five-passenger coupe appears on the Graham-Paige eight and the 129-inch wheelbase six, priced respectively at \$2,385 and \$2,085. The two-door phaeton is offered on the 119-inch and 114-inch sixes at \$1,745 and \$1,435.

### Ship of Desert 125 Feet Long; 45 Feet High

A WELL-NIGH incredible report of the design of a giant automobile ship of the desert with wheels standing as high as the average city house and with a 5000 to 7250-mile cruising radius has been made public by the Department of Commerce on advice from H. G. Schuette, Assistant Trade Commissioner at Paris. This automobile, or desert liner, is reported to have been designed by a German engineer. Its dimensions are said to be 125 feet long, 25 feet wide and 45 feet high, mounted on wheels 12 meters, or 39.37 feet, in diameter.

### Everitt Heads Verville Co.

DETROIT, Aug. 11—B. F. Everitt, pioneer automobile manufacturer, has been elected president and general manager of the Verville Aircraft Co. which has purchased the Rickenbacker Motor Co. plant. The company will manufacture small, low-priced planes.

### Heads Peerless Branch

CLEVELAND, Aug. 15—Leon R. German, president of Peerless Motor Car Corp., has announced the appointment of W. C. Auble as the Peerless branch manager in the territory.

### Motor Wheel Tops Record

NEW YORK, Aug. 14—The largest volume for any single month in the history of Motor Wheel Corp. was recorded in July, when more than 2,700,000 sales were recorded.

### Nash Demand Gains

KENOSHA, WIS., Aug. 11—National demand for the new "400" Series Nash cars is steadily increasing, according to official reports made by the Nash Sales department. For the week ending August 11, new car orders for August delivery totaled approximately 35,000.

### Lay Asst. Chief Engineer

SYRACUSE, Aug. 11—R. P. Lay has been appointed assistant chief engineer of the Franklin Automobile Co.

### Triphagen Leaves Reo

DETROIT, Aug. 13—Clarence A. Triphagen has resigned as general sales manager of the Reo Motor Car Co.

## Detroit Labor Nearing Record

Employment Only 600 Under Top Mark; Ford Has 117,709 Employed

## FEAR SHORTAGE

DETROIT, Aug. 11—Industrial employment in Detroit is increased until now it is only slightly under the high mark for all time, according to the Employers' Association. The association's report, which covers 70 of the city's largest industries—that employ approximately two-thirds of the industrial labor of Detroit—shows that employment in these plants last week was within 600 of the all-time peak total.

According to Chester M. Culver, general manager of the association, there are actual shortages of help in the city in some skilled trades and certain types of common labor. There is demand for skilled metal tradesmen, such as polishers, finishers and machinists. There is also a shortage of the right kind of common labor.

Ford Motor Co. has reached the highest employment peak in its history, with 117,709 employees. Of this number, 78,938 are at the Fordson plant, 34,685 at the Highland Park plant and 4086 at the Lincoln plant.

### Nichols-Ackers Resign

DETROIT, Aug. 13—John A. Nichols, Jr., president and general manager, and Forrest H. Ackers, general sales manager of the Falcon Motors Corp. have resigned their positions.

### Oakland Business Improves

DETROIT, Aug. 13—The Oakland Motor Car Co. sold a total of 22,704 Oakland and Pontiac Sixes during July, according to W. R. Tracey, vice-president in charge of sales. This compares with 16,752 units sold in July, 1927.

### Knudsen-Grant on Tour

DETROIT, Aug. 11—W. S. Knudsen, president of Chevrolet Motor Co. and R. H. Grant, vice-president in charge of sales, left Detroit last week for a three weeks' business tour of the entire western half of the United States.

### Baker Joins Franklin

SYRACUSE, Aug. 10—Cannon Ball Baker has joined the technical staff of the Franklin Automobile Co. in the capacity of chief demonstrator.

## M.A.M.A. Credit Men to Convene

Annual Conference to Be Held at Buffalo; to Last Two Days

NEW YORK, Aug. 13—The annual conference of the credit managers of members of the Motor and Accessory Manufacturers Association is to be held this year at the Hotel Statler, Buffalo, September 12 to 14.

Following the usual program, Wednesday and Friday will be given over to credit group meetings and Thursday will be devoted to the general meeting for all credit managers and to a number of special speakers. In this way, all credit managers will be enabled to attend the general meeting and their own group meetings at the sacrifice of only two days.

Speakers for the general meeting have not yet been determined.

### Harry Sisson Retires

PITTSFIELD, MASS., Aug. 14—Harry D. Sisson has vacated the office of general manager of Sisson-Buick Co. and is succeeded by A. R. Thomas. Mr. Sisson, who is a former mayor of the city, has been 24 years in the automobile business and is said to be the oldest New England Buick man in point of continuous service.

### Georgia Receipts Gain

ATLANTA, GA., Aug. 11—Receipts from the sale of automobile license tags already amount to \$100,000 more than the receipts for the entire year of 1927, it is announced by the motor vehicle department.

### Car Output Off in 1927

WASHINGTON, Aug. 11—Because of the temporary cessation in production of Ford automobiles during 1927,

### Sales Manager



C. N. Uhl

He heads Dayton Rubber Mfg. Co. sales. You read of his appointment last week; here's his picture and we hope he likes it as well as we do

the automotive vehicle group production declined 17 per cent in 1927 as compared with 1926, the Department of Commerce Yearbook, just issued, shows. The yearbook, however, shows increases in the gasoline, tire casing, and motor truck and bus manufacturing industries.

### Millionth Car Title

WASHINGTON, Aug. 13—Maryland, first state to adopt an automobile title law, issued its millionth automobile title last week, it was reported by the American Motorists Association research bureau.

### Triplex Gain 2195 Per Cent

NEW YORK, Aug. 10—Triplex Safety Glass Co. of North America did 20 times the business in July of 1928 that it did in July of last year, according to announcement made yesterday. Actual increase in the sales were reported as 2195 per cent.

### The Changing Times

By O. L. Steensland, Lake Andes, S. D.

*Yesterday*  
all over yours when it comes to speed."

"Maybe so," said Dad, "but that car of mine has all the speed that any sane man would want. The way some of these young fools go tearing up the road at a race-horse clip they ought to be arrested."

#### Today

Dad's whiskers stand out like a pair of twin ramrods as they are blown fiercely back over his shoulders by a mile a minute speed.

A long black hood creeps past his rear fender and Dad's

## Graham-Paige to Increase Capacity

Expands to Produce 600 Cars a Day to Meet Heavy Demand

DETROIT, Aug. 13—Extensive additions to a total cost of \$1,500,000, have been begun by Graham-Paige Motors Corp. at its main plant in this city and at its body plants at Wayne, Mich., and Evansville, Ind. The new buildings and equipment, designed to increase production facilities from 400 cars to 600 a day, have been made necessary to meet the demand for the new line of cars introduced this year by the three Graham brothers, the last six months' sales having exceeded any previous entire year and doubled the 1927 total.

Besides the new construction, the company has purchased a group of buildings having a total floor area of 262,000 square feet, to which will be moved the service and export shipping departments, releasing space for production at the main plant.

### Ford Makes Brake Changes

To comply fully with state laws, Ford Model A cars are now turned out with parking brakes which are independent of the four-wheel service brakes. The parking brake acts on the two rear wheels, being applied to the same drums on which the rear wheel service brakes act.

### Centralizes Operations

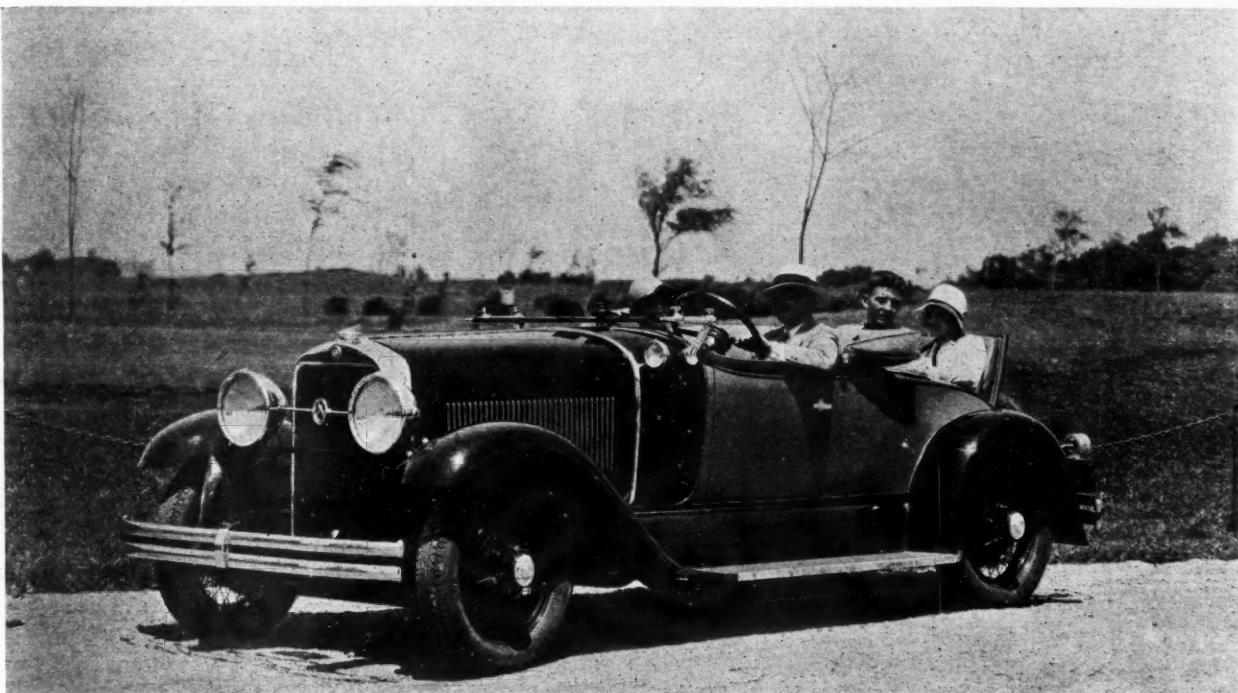
BALTIMORE, Aug. 11—Harter B. Hull Co., Baltimore Dodge Brothers representative, has centralized all its operations in its main plant.

### Walter Scott Adds

BALTIMORE, Aug. 13—Walter Scott, Inc., Baltimore Marmon distributor, has added another story to his building.

number eleven hits the floor board with the accelerator tucked neatly under his shoe. The black hood holds its own for a while but slowly loses ground as Dad's latest eight-cylinder creation gets down to the business of running in earnest.

Were it not for the roar of the wind in your ears you would hear Dad mutter: "Why in Tunket don't they put a little ginger in these danged contraptions so a man wouldn't have to get half run over by every young squirt on the road?"



### *Swanky, Eh, What?*

**THIS** new President Eight roadster, gleaming with color and bright chromium plating, is announced by Studebaker. Its low fleet lines, accentuated by an entirely new treatment of moldings and color finish, reflect the brilliant performance of the 109-horsepower straight eight motor, which offers 80-mile speed. A khaki top with natural wood bows folds flat into a trim, tailored boot. The chromium-plated windshield folds forward

#### Nash Business Good

KENOSHA, Aug. 10—C. W. Nash, president of Nash Motors Co., in a letter to stockholders, reports orders in July exceeded production by 12,000. Shipments during the month totaled 18,000. He reported the outlook for the company to be bright. Orders for August now at hand are reported exceeding 32,360.

#### Indian Drops Cab Idea

SPRINGFIELD, MASS., Aug. 13—Indian Motocycle Co. experiments with taxicabs have been dropped and service has been discontinued in several cities.

#### Calvert Motors Takes on De Soto

BALTIMORE, Aug. 11—Lord Calvert Motors, Inc., recently organized, has become distributor of the new De Soto Six. William R. Dean is manager.

#### Goodyear Tire & Rubber Co. Net.

Goodyear Tire & Rubber Co. reports net profit for the first half of 1928 as \$3,074,200. This is after providing \$4,690,966 for depreciation and charging off for special reserves \$2,500,000 as cost of crude rubber in excess of the market price as of June 30.

#### Marmon Export Trade Good

INDIANAPOLIS, Aug. 13—Hal L. Purdy, vice-president and general manager of Marmon Motor Car Co., returning from Europe, said he expected Marmon to double its European business

in the next 12 months. Development of oil fields in Russia will aid in opening the market for automobiles in Europe, he said. The company has opened an office in Paris to handle Continental distribution.

#### N. J. Save-A-Life

TRENTON, N. J., Aug. 14—Eight hundred thousand owners of motor cars and trucks operating in New Jersey will be urged to cooperate with the state in its plan to inspect all motor vehicles for defects in safety factors, during the "Save a Life" campaign to be conducted during September.

#### *Buys Confiscated Car—Gets Gallon of Good Whiskey*

ONE of the greatest automotive "bargains" in the history of Washington auction sales was recorded the other day when a young architect bought a machine for \$18.50 at a U. S. Marshal's sale. The car was not the bargain. Under the seat, when he got home, Morton Levy, the purchaser, found a gallon of choice corn whiskey. Revenue agents hadn't searched it thoroughly when they confiscated it for running rum.

#### Bugatti Bosch Equipped

NEW YORK, Aug. 11—A cablegram received at the Long Island City headquarters of the Robert Bosch Magneto Company, Inc., contains the news that the Bugatti which finished one, two, three, four, five in the recent Grand Prize of San Sebastian race were equipped with Robert Bosch magnetos, as were also the winning cars in all classes in the Grand Prize of Spain race.

#### Federal Aid Allotment

WASHINGTON, Aug. 11—A total of Federal aid for roads of \$25,741,403.29 has been allotted. Texas received more of this amount than any other state.

#### Wisconsin Adds to Plant

OSHKOSH, WIS., Aug. 11—Wisconsin Parts Co. of Oshkosh, manufacturer of Wisconsin Double Reduction and Worm Drive Axles, is building an addition to its plant.

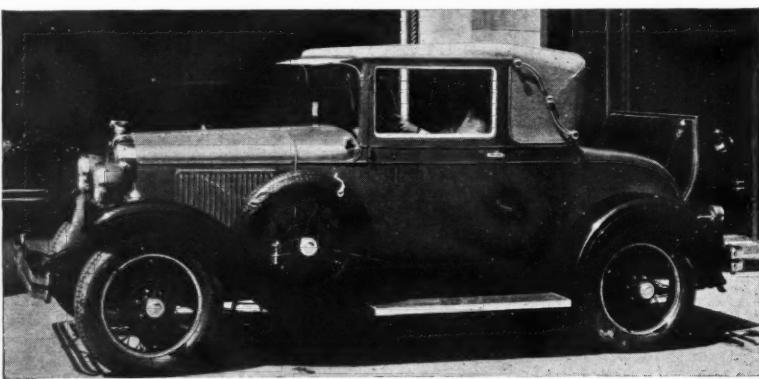
#### Mack Trucks Net Profit

Mack Trucks, Inc., reports net profit for the first six months of 1928 as \$2,830,055 after all charges. This is equivalent to \$3.84 a share on common stock.

#### Hall Co. Adds De Soto

HOLYOKE, MASS., Aug. 11—Hall Motor Car Co. has been appointed De Soto dealer here, and will continue to be the Dodge representative.

Pontiac Sport



**THIS** new sport equipped Pontiac Six cabriolet is equipped with six wire wheels and a folding trunk rack. Extra wheels are cradled in fender wells and held fast with chrome-plated clamps. Interior appointments are in keeping with the exterior design of this beautiful car.

### Robert Bosch Equipped

NEW YORK, Aug. 11—A note of appreciation from Louis Crooy and Victor Groenen, Belgian Army fliers, says that Robert Bosch magneto ignition equipment played an important part in setting their new world's record for endurance flying at the aerodrome of Tirlemont in Belgium. They remained in the air 60 hours, 7 minutes, 3 seconds with the aeroplane DH 9 Nr-32, a small biplane built in 1924.

The small capacity of the plane made it necessary for another aeroplane to refill the gasoline tanks 13 times during the flight.

### Philippines Total Grows

WASHINGTON, Aug. 12—Automobiles are playing a major part in modernization of the Philippines, according to advices from Manila to the Department of Commerce, showing that the 28,000 automotive vehicles there

have contributed heavily to opening sparsely settled areas, speeding up commerce and enlarging contributions to the government directly through taxes.

### Hudson Tops Record

DETROIT, Aug. 14—Hudson produced and shipped 25,206 Hudson and Essex cars in July. This brings the year's total to 208,271 cars, or the largest seven months' total Hudson has ever known.

### Moon Has Good Month

ST. LOUIS, Aug. 13—Stanley Moon of the Moon Motor Car Co. reports shipments in July as 20 per cent above June. Each month has shown higher shipments than the preceding month all this year.

### Timken Net Earnings

Timken Roller Bearing Co. reports earnings of \$6,395,573 in the first half this year as against \$5,406,834 in the same period last year.

## Aladdin Rubs His Lamp Once More

**This Time** Motorists in Calif. Are Recipients of His Favor

SAN FRANCISCO, Aug. 11—A chain of light beacons for aviators and motorists, each beacon to be surrounded by an airport, garages, service stations for planes and automobiles, with repair shops for both and a commodious hotel for travelers, is to be established from the Canadian border to the Mexican line, along the Pacific coast, by the Richfield Oil Co. Completion of the system, which is announced in an official statement by the oil company, will involve an expenditure of more than \$10,000,000, which sum has been appropriated for immediate commencement of the work.

The beacon-stations will be on the state highways, from San Diego to Blaine, Washington, at intervals of approximately 50 miles, and will be entirely outside of cities or towns. The hotels will be operated on the chain system, with one scale of prices, and the garages, service stations, and repair shops will have the flat rate of charges. Chain drug stores and equipment dealers will operate on the same principle, all to the end that the motorist may know, when he starts along this chain, just what his expenses will be at each station.

The beacons will be visible to the motorists for 25 miles on all sides.

### McLaughlin at Columbus

COLUMBUS, OHIO, Aug. 14—For the purpose of coordinating sales efforts of Chevrolet dealers in Columbus and vicinity, the Chevrolet Motor Co. has named T. P. McLaughlin, formerly connected with the central offices at Detroit, sales manager for the Columbus district.

## The Automotive Calendar

### SHOWS

Automotive Equipment Association, Coliseum, Chicago, Oct. 22-27.

\*Chicago, National Coliseum, Jan. 26-Feb. 2.

Eastern States Exposition, Springfield, Mass., Sept. 16-22.

National Standard Parts Association, Cleveland Auditorium, Oct. 29-Nov. 3.

\*New York, National, Grand Central Palace, Jan. 5-12.

Salon, Automobile Salon, Inc., Hotel Drake, Chicago, Jan. 26-Feb. 2.

Salon, Automobile Salon, Inc., Hotel Biltmore, Los Angeles, Feb. 9-16.

Salon, Automobile Salon, Inc., Hotel Commodore, New York, Dec. 2-8.

Salon, Automobile Salon, Inc., Palace Hotel, San Francisco, Feb. 23-March 2.

Toronto, Can., Aug. 24-Sept. 8.

### CONVENTIONS

Automotive Equipment Association, Coliseum, Chicago, Oct. 22-27.

National Standard Parts Association, Hollenden Hotel, Cleveland, Oct. 29-Nov. 3.

World Motor Transport Congress, Rome, Sept. 25-29. S.A.E.

Detroit, Book-Cadillac, Annual Meeting, Jan. 15-18.

Newark, Robert Treat Hotel, Transportation Meeting, Oct. 17-19.

New York, Annual Dinner, Hotel Astor, Jan. 10.

### RACES

Altoona ..... Aug. 18

Salem ..... Oct. 12

Syracuse ..... Sept. 1

\*Will have special shop equipment exhibit.

Oct. 10—Marketing Annual for 1929—Motor World Wholesale.  
Nov. 17—Production Issue—Automotive Industries

## Oldsmobile Breaks Previous Record

Best Former Year's Mark is Eclipsed in Seven Months of 1928

DETROIT, Aug. 14.—With another month of record-breaking business during July, Oldsmobile has in the seven months of 1928 exceeded all previous full-year records. More than 60,000 Oldsmobiles have been shipped between January 1 and July 31 this year. This exceeds the number of Oldsmobiles shipped during the best previous 12 months, factory officials report.

Oldsmobile production and shipments during the past five months of March, April, May, June and July this year have averaged 10,682 cars a month. The banner month was May, when 11,716 Oldsmobiles left the factory. Shipments were low in January and February this year incident to producing an entirely new car.

During these months of record production, shipments and sales, the stock in the hands of the dealers has remained, and is, below normal.

"The record made by Oldsmobile since January 1 this year speaks eloquently of the high place the new Oldsmobile has won in the confidence of the public," said D. S. Eddins, vice-president and general sales manager, when announcing the figures.

"Oldsmobile has made these phenomenal gains without increasing its line of cars and in face of three years of exceptionally good business. The company had been exceeding previous records during 1925, 1926 and 1927, when, in January of this year, it announced its new and present line of Oldsmobiles."

### Form Service Bureau

ST. LOUIS, Aug. 11—The St. Louis Automobile Dealers' Association has organized a service bureau with a view to giving emergency service to customers anywhere within 10 miles of the city limits.

The service will be in the form of a present to purchasers of new cars, in most instances, and where the dealer feels justified in charging the customer for the service, the cost will be \$7 a year.

To carry out the proposed service the Association has contracted with the Nelson Motor Car Maintenance Co., of which David G. Nelson is the head, to perform the required "trouble shooting" day and night. The service will include tire changes, battery recharging or any trouble causing a car to stall on the road or in the garage.

### Opens New York Office

CLEVELAND, Aug. 11—Gears & Forgings has opened a New York office. Presley Hamilton will be in charge.



By Lewis C. Dibble

THE weather isn't the only thing that's hot. The new Marmons have been described that way.

\* \* \* \*

Speaking of heat reminds us that the Nagel Electric Company could have done a swell job demonstrating their nifty new line of heat indicators in Detroit last week. It was hotter than gehenna at its gehennest.

\* \* \* \*

And this little ditty we dedicate to J. L. Ballard, Director of Districts for DeSoto.

No longer in the blazing sun for bites of fish I'll wait,  
For sport goods stores get all the dough and the fish get all the bait.

\* \* \* \*

Now we know how James R. Hughes, body engineer for Studebaker keeps in condition. A picture showing a machine for testing seat cushions and springs which appeared in a Detroit newspaper recently carried the following highly illuminating statement: "Subjected to an oscillating motion for hour after hour in the above machine, body engineers can determine in the matter of days the effects of years of ordinary service."

\* \* \* \*

No doubt when that German engineer builds his 150-passenger four-decked bus for crossing desolate steppes, Sparton will busy itself designing a warning signal that'll put The Desert Song to shame.

\* \* \* \*

Howard Sneathen was saying the other day that Graham Brothers have 2240 different models of commercial cars. The figure was arrived at by combining the 47 different types available with 48 different types of bodies with other equipment variations. At this rate Caesar, who was noted for knowing all the men in his army, would be busier than a Philadelphia lawyer provided he were a Graham Brother's salesman and tried to memorize the specifications and prices of the full line.

\* \* \* \*

W. C. Durant set out 25 years ago to make automotive history. That he is still making it is evidenced by the statement of Ted Johnston that during the first six months of the year Durant has contributed 17 per cent of the total gain made by the industry. This is territory where W. C. feels right at home.

\* \* \* \*

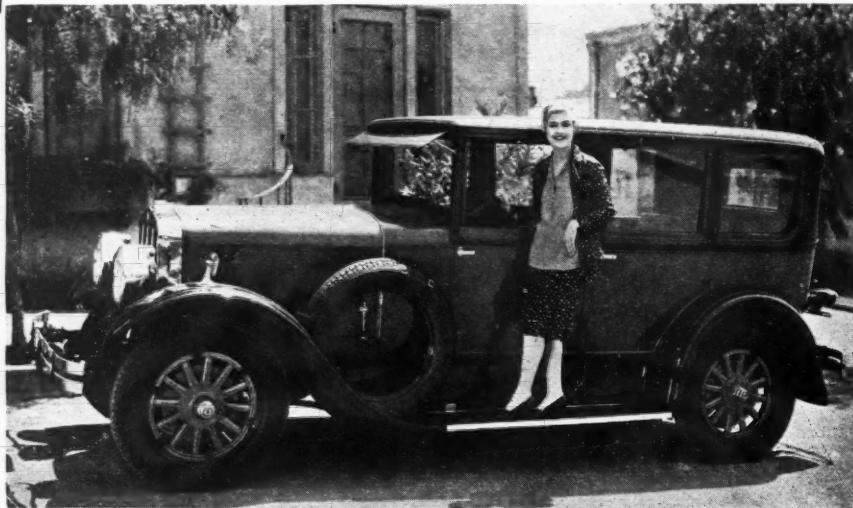
*It's a "long way" from a factory bookkeeper to the title of assistant comptroller of General Motors. If you don't believe this just ask Robert Longway, of Buick, who has just had this title conferred upon him. Bob, as he is known to his large circle of friends, went to Flint in 1907 with the Weston Mott Co., which in the old days manufactured Buick axles. Bob stuck to his tasks and from time to time has been rewarded for meritorious services through advancements. In his latest promotion he will be comptroller in charge of the Buick plants—and that's a "long way" from the job in which he started.*

\* \* \* \*

The old theory that one good job deserves another holds good in the case of Perry C. Gartley. Some years ago Perry did a great job for Willys-Overland on the Pacific Coast. Then he put the company across with a bang in the Detroit territory and in recognition of his services he has just been made a regional sales manager with headquarters at Toledo.

\* \* \* \*

Ed. R. Parker, who knows more automobile dealers up and down these United States than one could shake a stick at, has just been named general sales manager of Stutz. Ever since he left the old family farm down in New York State Ed. has been traversing the country, first one way then another, and every time he's made a success of his business—and that has been SELLING automobiles.

***She Likes It***

*LAURA LaPLANTE, famous Universal film star, is as enthused over the luxurious style and interior of her Franklin Airman as she is in the smart home she occupies near Universal City, Cal. Who can blame her?*

**To Make Jupiter Engine**

NEW YORK, Aug. 11—E. W. Bliss Co., of Brooklyn, and the Bristol Airplane Co., of Bristol, England, have entered into an agreement giving the former exclusive license for the manufacture and sale of the Bristol Jupiter engines in the United States and its territories.

The Jupiter engine, which was one of the pioneers in static radial air-cooled type airplane motors, is widely used in Europe by commercial air transport companies.

**Two Die in Plane Crash**

CINCINNATI, Aug. 10—Wendell Pavey, 42, leading Ford dealer, and J. L. Bovis, 34, dealer at Hamilton, Ohio, were killed recently in a plane crash. The pair took off for Akron to par-

ticipate in a golf meet of Ohio automobile dealers. They were advised against flying on account of fog and crashed shortly after starting, following a series of stunts over the airport.

**Williams Joins Dayton**

DAYTON, Aug. 10—J. Gordon Williams is newly appointed factory representative of Dayton Rubber Mfg. Co. His territory embraces North and South Carolina.

**U. S. Cars in France**

WASHINGTON, Aug. 14—France and French colonies had 718,791 passenger automobiles registered on Jan. 1, 1928, and 15.3 per cent of this number were products of the United States, according to the Department of Commerce.

**Chapin Optimistic Regarding Future****Hudson Chairman Says Day of Car-Per-Person Soon to Come**

SAN FRANCISCO, Aug. 10—The annual expenditure of one billion dollars or more on the building and maintenance of highways in the United States is making every farm-house a potential market for at least one automobile, and pushing back further and further the mythical "saturation point," in the opinion of Roy D. Chapin, chairman of the board of directors of the Hudson Motor Car Co., and former president of the National Automobile Chamber of Commerce, here on tour of the offices of Hudson-Essex distributors in the West.

Optimistic in the extreme, Chapin said: "Business is good with the automotive industry and will get better as time goes on. The general business outlook for the balance of 1928 is excellent, with all indications pointing to continued increase in automobile production, with a market waiting and ready.

"The two-car family already is with us by the tens of thousands and the day of *a car for every person in the family is just around the corner*. The automobile industry as a whole may look forward with the utmost confidence to increasing production and widening markets. There is no such thing as a 'saturation point'."

**Non-Skid Precautions**

TOLEDO, Aug. 13—A movement to educate motorists on the real causes of skidding has been started under direction of Arthur H. Blanchard, president of the National Highway Traffic Association, with headquarters here.

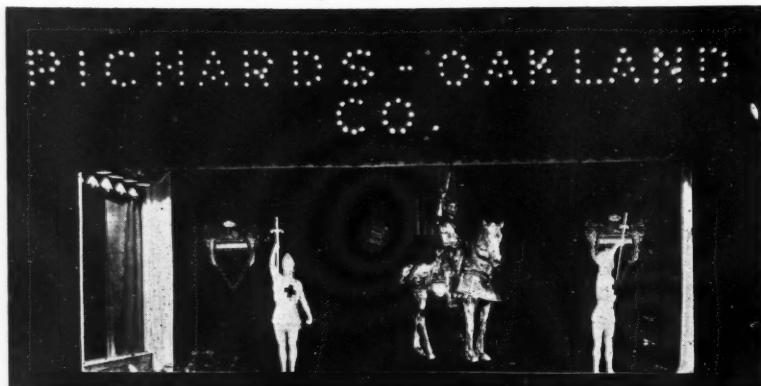
He has assembled the results of several important studies on skidding made by scientists and is working out an educational campaign to be carried on through automobile clubs, safety councils, and other organizations to tell automobile owners exact causes of skidding, how to handle a motor car properly under skidding conditions, and various speeds to employ under certain conditions as a means of cutting down accidents.

**Evans Stock Increase**

DETROIT, Aug. 13—Stockholders of the Evans Auto Loading Co. have approved an increase in capital stock from 100,000 shares of \$5 par to 200,000 shares. A 100 per cent stock dividend will be paid Sept. 1 to stock of record Aug. 15.

**Kelsey-Hayes Net Profit**

Kelsey-Hayes Wheel Corp. reports net profit in the first half this year of \$477,066, after expenses, Federal taxes and other charges. This compares with \$573,164 in the same period last year after expenses but before taxes.

***A Modern Window Display***

*WHEN the Knights Templar of the United States and Canada staged their convocation at Detroit this month, one of the most spectacular window displays in their honor was that of the Richards-Oakland Co.*

## Iowa Road Plan Saves Ten Years

### Big Bond Issue Will Speed Up Construction of Highways

Iowa motorists will be saved ten years of travel over uncompleted primary highways.

This saving will be accomplished through the adoption of the proposed \$100,000,000 bond issue plan this fall, which amounts to nothing more or less than the injecting of private business methods into the state's business of building roads.

Iowa's annual highway income from motor license fees, gasoline tax and Federal aid will average about \$15,700,000 for the next six years and about \$13,700,000 for the following 20 years. If the annual yearly income were to be applied directly to road building efforts, the present primary system would not be completed for 16 years, or 1944, so declare members of the state highway commission. Under the bond issue plan the present system will be completed in six years.

### Cities Adopt Traffic Kink

NEW YORK, Aug. 11—Increased adoption of the policy of separating crosswise motor traffic from main thoroughfares at busy intersections by elevating or depressing crosswise traffic is noted by the Street Traffic Department of the National Automobile Cham-

ber of Commerce. In some cases this grade separation is effected by raising the level of one street slightly and depressing the level of the other so that there is a minimum change of grade on either thoroughfare.

Among the cities which have adopted such improvements are New York, Chicago, Detroit, Pittsburgh, St. Louis and San Francisco.

### New Cooper Batteries

CINCINNATI, Aug. 13—Discovery by Major E. L. Hoffman and Frank S. Crispin of a secret formula permitting the manufacturer of automobile batteries, which require moistening with a tablespoon of water only four times a year, has enabled the Cooper Corp. to offer what is said to be a successful dry power unit. It is the same size as standard batteries.

### Hilles Quits Packard

DETROIT, Aug. 13—Dr. H. H. Hiller, vice-president in charge of sales for Packard, has resigned.

### "Ask 'Em to Buy"

OUT of 85,442 automobiles inspected during a recent Save-a-Life campaign in Alabama, the headlights of one out of five cars needed adjustment, and one out of every 12 cars needed replacements, according to the sales promotion department of the National Lamp Works of General Electric Co.

A recent survey in New York State showed that about one out of every three cars needed headlight adjustments. These campaigns reveal two startling facts from which the dealer may readily capitalize; that a large percentage of automobiles need adjustments, and that car owners will make the necessary repairs if their attention is called to them.

### Insurance Law Entangles

BOSTON, Aug. 11—Massachusetts automobile dealers are wondering when they ever will get an interpretation of the insurance laws in the Bay State that will be final. They are just being informed now that dealers or financing companies who sell cars but retain title to the vehicles until the full payment is made, are liable for automobile accident damages, where judgments are awarded by the courts, to exceed the amount of the insurance policy carried.

That fact and amendments to the Compulsory Liability Insurance Law this year virtually compel submission to a jury when the question of legal responsibility arises, is maintained in an opinion given out by one of the leading law firms of this city in answering a question asked by a casualty company.

### Moto Meter Net Income

Moto Meter Co. and subsidiaries, including the National Gauge & Equipment Co., report net income for the six months ended June 30 of \$351,051 after all charges.



### Time Saver

ANOTHER chapter in modern industrial speed and efficiency was written recently by The B. F. Goodrich Co. in the purchase of a new Fairchild plane for company use. The plane is a four-passenger cabin-cruiser type and carries a 225-horsepower Wright Whirlwind motor. This motor is a duplicate of the one used by Colonel Lindbergh on his trans-Atlantic flight.



### Prest-O-Liters

HERE are shown district salesmen from all parts of the country who attended the recent sales convention of the Prest-O-Lite Storage Battery Corp. The delegates were housed at the Indianapolis Athletic Club and were transported to the Prest-O-Lite plant just opposite the world-famous Indianapolis Motor Speedway for the convention sessions. You read about it in last week's MOTOR AGE; we thought you'd like to meet them face to face

## Willys-Overland Shows Big Gain

TOLEDO, Aug. 11—Remarkable gain in export business by the Willys-Overland Co., in the first half of 1928 was noted in the company's semi-annual statement issued here today. The company shipped 5556 cars for export in July, showing a gain of 165 per cent over the same period last year. Contracts have been let for adding another story to the big new export building at a cost of nearly \$500,000.

The company had net earnings of \$5,641,517 after charges and federal taxes but before preferred dividends for the first six months of 1928 as compared with \$5,238,053 for the same period last year.

#### Cothran Takes on Hupp

RALEIGH, N. C., Aug. 14—Cothran Motor Co. has taken on the Hupmobile. E. G. Cothran, former Studebaker dealer here, is president of the company.

#### Farm Income Increases

WASHINGTON, Aug. 13—Farmers had an income approximately 1 per cent higher during the 1927-1928 sea-

son than during the 1926-1927 season, according to a statement made public by the Department of Agriculture. Earnings are held to represent an increase in average income per farm operator available for labor capital and management "from \$862 in 1926-1927 to \$886 in 1927-1928. In 1925-1926 the income was \$922 on this basis. The department estimates the farmer earned a return of about 3.4 per cent on his capital at market value, considering farms as business enterprises.

#### Big N. Y. Truck Order

NEW YORK, Aug. 14—Boroughs of New York City have recently ordered 240 trucks, costing more than \$1,175,000, from the American-La France and Foamite Corp., according to announcement by Charles B. Rose, president.

#### Hupp Totals Gain

DETROIT, Aug. 14—Hupp shipped 5010 cars in July, as compared with 2567 in July last year and 4481 in July, 1926.

#### Lanford Takes on De Soto

SPARTANBURG, S. C., Aug. 10—The recently formed Lanford Motor Co. has acquired the agency for De Soto. Herbert S. Lanford is manager.

## duPont Resigns But Gets Leave

NEW YORK, Aug. 10—Alfred P. Sloan, Jr., president General Motors Corp. made the following announcement following the directors' meeting yesterday afternoon:

"Mr. Pierre S. duPont submitted to the directors his resignation as chairman for the reason that he felt that his activities in connection with the association against the prohibition amendment might cause confusion in the public's mind and give the impression that General Motors was involved in the movement. The board felt that the position of the corporation having been stated was understood and that all should appreciate that Mr. duPont's activities in connection with that association's work were entirely those of an individual and they did not concern the corporation. The resignation was, therefore, not accepted and Mr. duPont was accorded a leave of absence instead."

#### G. M. Acceptance Earnings

General Motors Acceptance Corp. reports net profit for the six months ended June 30 as \$5,223,420 after all charges.

## Studebaker—P.A. Now Associated

### Deal Not a Merger; Alliance is Fourth Largest in Industry

BUFFALO, Aug. 11—Two of the oldest vehicle manufacturers, the Pierce-Arrow Motor Car Co. and the Studebaker Corporation of America, became associated today when Pierce-Arrow stockholders approved reorganization plans.

While the arrangement is not a merger, Studebaker's large selling and production facilities will back the smaller firm. The allied interests represented by the two companies form the fourth largest motor-manufacturing group, with total assets approximating \$200,000,000.

Under the terms of reorganization ratified by the shareholders, each holder of the present 8 per cent preferred stock of Pierce-Arrow will receive for each share and all unpaid dividends \$10 a share in cash and eight-tenths of a share of 6 per cent preferred stock of the new company. Each holder of the present common stock will receive six-tenths of a share of class "A" stock in the new company for each share held. The Studebaker Corporation will invest \$2,000,000, receiving in return 230,125 shares of class "B" stock.

Class "A" stock has one vote and class "B" stock two votes in all company affairs. The class "A" will be on a \$2 annual dividend basis and will be redeemable any time before December 31, 1932, at \$40 a share.

A. R. Erskine, president of Studebaker, is chairman of the board of the new company, and Myron E. Forbes is president.

### New Package Makes Hit

On every hand the Wilkening Mfg. Company's new Economy carton is meeting with enthusiastic praise. It saves 50 per cent of the shelf space for a given quantity of rings and assures an always balanced stock. Shipments of the new package are rapidly increasing.

### Ed Parker Joins Stutz

INDIANAPOLIS, Aug. 10—Ed. R. Parker, for many years well known in the automobile industry, has joined Stutz Motor Car Co. as general sales manager. The appointment was made public in a statement issued by E. S. Gorrell, vice-president of the company. Mr. Parker's association with the automobile industry dates back to 1910.

### 1929 Cadillac-La Salle Soon

DETROIT, Aug. 13—Simultaneous announcements of the Cadillac and La Salle lines for 1929 is expected within the next few days, according to advice from the Cadillac Motor Car Co.

## Jest—a Bit Cynical

By Sherman Swift

JOE SMITH is a slender slab of a man, his great height accentuated by his stringiness. He hasn't a muscle showing in his whole body. He looks more like a clerk than an automobile mechanic. And yet he's the strongest man I've ever seen. At least he appears to be. Years ago, long before Joe ever thought of working on automobiles, I used to marvel at the way he would lay a fifty pound anchor on to his fire, blow it up to a white heat and then, lifting it easily to the anvil, hold on to the cool end of it with his left hand while he straightened out the bent flukes with blows of an 18 pound hammer held in his right. Nothing that Joe ever did appeared to be an effort.

Joe had a farm that he worked on at odd times during the winter when there were no horses to sharpen and his supply of eel spears and quahaug rakes was sufficient to allow him this period of leisure. One day I watched him loading stones into an ox-cart. For some reason known only to the original designer—probably to dodge stumps—and followed blindly by his successors who hadn't bothered to think for themselves, ox-carts down our way are made with great high wheels, the body being fully a foot higher than that of a truck wagon, so called. It takes a real man to put a 60 pound sack of potatoes into one of them, and yet Joe was picking up great slabs of granite that the ordinary man couldn't move and sliding them up a plank into the cart without apparent effort.

I asked him once what kind of muscles he supposed he had. "They don't show," I said, "but still you're the strongest man in town."

"I'm not the strongest man in town," he answered. "There's 10 men that's stronger than I am. *But they don't know it.*" And then he explained that his strength was not so much a matter of muscle as of knowing how to use what he had.

"*It isn't so much what you do as it is how you do it,*" explained this village philosopher. There's a lesson in that for all of us.

ON the generally accepted theory that it takes all kinds to make a world, there must be those who like this column. There are even a few who write in from time to time to state that they really find things of interest in it. Strange though that may seem, their letters appear to be written by intelligent men. Harold Wright—I assume that he isn't the author of that name—sends me a most interesting communication this morning. It consists of five pages and there isn't a dull word in the entire contents. He believes that the theorist is making alarming strides in getting his stuff before the public and suggests that more attention be paid to the practical side of things. That may be true; I do not know nor am I willing to get all het up about it. It's too sultry to worry more than is necessary. But I recall an incident that I might use as illustration of the value of the practical against the theoretical—if I happened to be interested. Here it is: A few years ago two learned gentlemen were watching a schooner being unloaded of a cargo of heavy bags at the village wharf. One of them, kicking a broken bag, from which trickled a fine white substance, said in his well-bred manner that he had frequently seen them refining this "sugar" and described to his companion the way in which it was done. Captain Rat-tail, the other village half-wit—I had left home at the time—suspended his fishing to listen. After the gentleman had finished, Captain Rat-tail butted in to say that the substance wasn't sugar. The educated lecturer paid him no heed. Again the captain interrupted: "That ain't sugar," he persisted.

"Well, well," said the man, "so it isn't sugar? How do you know it isn't?" he asked in the indulgent tone that one uses in addressing children and half-wits.

Captain Rat-tail was indignant. "'Cause I tasted it," he said. "It's salt."

**SLOGAN** for the manufacturer of a Certain New Brand of Cigarettes: "I'd walk a Million Miles for one of your Smiles." And since pictures of celebrities are the rule in cigarette advertisements, this slogan should be accompanied by a picture of Al Jolson.

Another slogan—they're coming fast this morning—for a manufacturer of alphabet soup; "Say it with Sibilants."

## John Cleary Says—

A good bridge player is one who can get the most out of any hand. He plans his bidding and playing to win game, to prevent opponents' game or to set them. If he must lose he cuts his loss down to the minimum.

Motor car dealers can absorb a lesson from the strategy of the good bridge player.

The dealer with a used car of ancient vintage for which there is apparently no market—or with a stock of such cars—holds a poor hand.

Like the good bridge player, he should study the bidding to get the most out of his hand. If he must lose, he makes every play count, to hold his losses down to the lowest point.

A friend of mine, not in the business, has a yen for some of the big, heavy powerful cars that sold for important money when they were new, eight or ten years ago. He believes that they are better than any of the cars made today. It is an obsession.

In other words, he is a perfect prospect for a type of used car for which the total number of prospects is extremely limited.

He is now in the market for such a car.

In making the rounds of dealer places recently, he came across a used car department with two cars he liked.

One was a roadster, listed at \$300. The other was a touring car, with a \$350 price tag on it.

My friend offered \$150 for the roadster and \$175 for the touring car. He was willing to take either or both of them at the prices he bid.

The salesman laughed at the offers.

"You won't get any more than that," said my friend. "You will probably have to give them to the junk man for less. Anyway, you had better take my name and address, in case you change your mind." He left his name and address and departed.

Exactly one week later the dealer sold the two cars at auction. The roadster brought \$75. The touring car brought \$110.

This was a total of \$185 for the two cars, against a total of \$325 bid by my friend.

Mr. Dealer, knowing his hand was a losing one, should have taken those two tricks when he had the chance, instead of letting the auctioneer trump them later.

No bridge player can afford to throw away two good tricks.

No motor car dealer can afford to throw away \$140 in cold cash.

# Interesting —and True



Walter G. Campbell, San Francisco Ford dealer, uses captive balloon as advertising stunt



W. E. Noble, oldest Oakland employee, born 1854, in his car, the oldest Oakland running, born 1912

To the left is shown the National Highway in Glacier National Park, missing link to the northernmost automobile route across U. S.

Look closely beyond the snout of the car below and you'll see the statue of the "Three Shades," marking western terminus of Lincoln Highway, in San Francisco

# Gentlemen May Prefer Blondes

WHEN he arrived in Chicago from the "Sunny South," Bob Cutter didn't forget to bring along some of the chivalry for which that portion of the United States is noted.

And being what many persons term a "go-getter" he didn't forget to put that very same chivalry to work for him when he started in business.

Bob decided that selling automobiles was his "dish." After looking over the field of automobile merchants in and around Chicago, he decided that the Radway Garage Co., Willys-Overland merchant in Oak Park, Ill., was the company he was going to work for. So he approached the sales manager, and got the job.

It wasn't long, so he says, be-

# B-U-T Ladies Prefer Chivalry

"It has been my experience," Bob says, "that a large portion of the sales are made to the woman of the family, either directly or indirectly, so naturally I have made it a point to build up a strong selling talk that will appeal to the woman buyer.

"In selling the woman I stress the beautiful interior of the particular car I am trying to sell. All women have a sense of the beautiful and I cater to it. A point I have found, although not new, is the fact that in our Willys-Knight Great Six and Special Six the upholstery is built over Marshall springs, the same kind of springs that are used in the finest parlor suites.

"I direct their attention to the controls and their easy ac-

*Take Another Look  
at the Title, Because  
It Explains How Come  
Bob Cutter, Son of  
the Sunny South, Sells  
the Fair Sex of  
Oak Park, Ill.*

fore he learned that a large portion of the sales of automobiles are made to the woman of the family, either directly or indirectly. So he started to perfect a sales talk (yes, he is one of the limited number of salesmen who write their own sales talks) that would appeal to the woman buyer.

But he went a step further. He learned that the majority of women to whom he talked could not drive an automobile. If they were able, they were decidedly inexperienced. This gave him another cue. Why not teach them to drive? Or if they knew, why not offer to give them additional lessons until they were more sure of themselves?

So that is what he did. It pays, one can be assured, for Bob sells upward of \$100,000 worth of new and used cars every year. And many of the names of prospects to whom he has sold cars were given him by members of the feminine sex who appreciated his thoughtfulness and courtesy.



tion. I point out that it is easy to handle in traffic; that the upholstery will not gather dirt easily and spoil their daintiest frocks.

"If they do not drive I act surprised, and assure them that in a few lessons they will be driving any place and with perfect confidence. At this point I mention the names of several women whom I have taught to drive.

"I have found it help-



*Bob Cutter, salesman of the Radway Garage Co., known to his friends as the "Go-get-'em boy" from Oak Park, Ill.*

*Left: Bob Cutter believes in advertising*

ready for the demonstration, it opens the way for me to get him to the salesroom and close the deal. This I handle in one or two ways. If I date my demonstration for the future I have found it advisable to call with a car other than the one to be demonstrated with the excuse that the demonstrator is being cleaned and will be ready for us by the time we reach the showroom. I make it a point to call with an old car, one that is broken in nicely, so as to impress the prospect favorably with the new car as we start out.

"Again, if I am driving the car which the prospect is likely to buy, and if he is ready to take his demonstration immediately, I make it a point to stop at the salesroom and invite him to look at the equipment we furnish with the car. This procedure has never failed to get my prospects into our place of business, and gives me the opportunity of getting over the rest of my sales talk."

*(Turn to page 34, please)*

*By*  
**Luke Hayes**

ful to give at least part of the driving instructions inasmuch as they will tell their friends that Mr. Cutter of the Radway Sales taught them to drive or gave them a few lessons. This helps in securing more prospects."

No salesman who sells \$100,000 worth of merchandise in a year can expect to get all his prospects from this source. Bob doesn't. He gets his prospects from three sources. One is by canvassing, another is from those to whom he has sold cars, and the third from those whom he sees on his floor days.

"When I get a prospect," he said, "the first thing I do is to classify him as to the model he would be most likely to purchase. My experience has been that whenever a prospect is given me by one of my customers, the customer is usually in a position to give me complete information regarding the prospect. I make every attempt to learn the financial condition of the prospect, the size of his family, etc.

"After I have the prospect properly classified, I make the call and arrange for the demonstration. When a prospect reaches the point where he is

# A Fancy Showroom

THE day when automobile dealers have to invest a fortune to obtain a beautiful showroom may soon be at an end. This is the impression one gets after visiting the beautiful model showroom which has been constructed at the executive offices of the De Soto Motor Corp., Detroit.

At first glance the appointments, which were designed by the Jaeger Studios, of Detroit, interior decorators, appear too rich and elaborate to be afforded by the ordinary dealer. But officials of De Soto are now making arrangements with suppliers to produce the various decorative pieces in quantity, with the result that the whole idea will be made available to dealers at the minimum of cost.

"For years it has been the experience of automobile dealers that large amounts of money were required to provide a rich and proper setting for their product," said C. W. Matheson, vice-president in charge of De Soto sales. "We realize full well that attractive showrooms hold excellent advantages. On the other hand, we also know that the attractiveness of the layout is regulated largely by the amount available to do the job. The plans which we have been working on are designed to relieve the dealer considerably in this situation."

Anyone familiar with retail selling of motor cars knows there is a world of truth in what Mr. Matheson said. If the De Soto Motor Corp. is successful in its plans to extend its standardized display room idea throughout its dealer organization, it will not be surprising if a marked trend in this general direction should develop throughout the entire automotive industry. Heretofore manufacturers have given much attention to assisting the dealer design and finance his place of business. But we doubt if manufacturers have ever gone to such great lengths as De Soto to provide their dealers with such a complete array of decorative features in keeping with their individual line of cars.

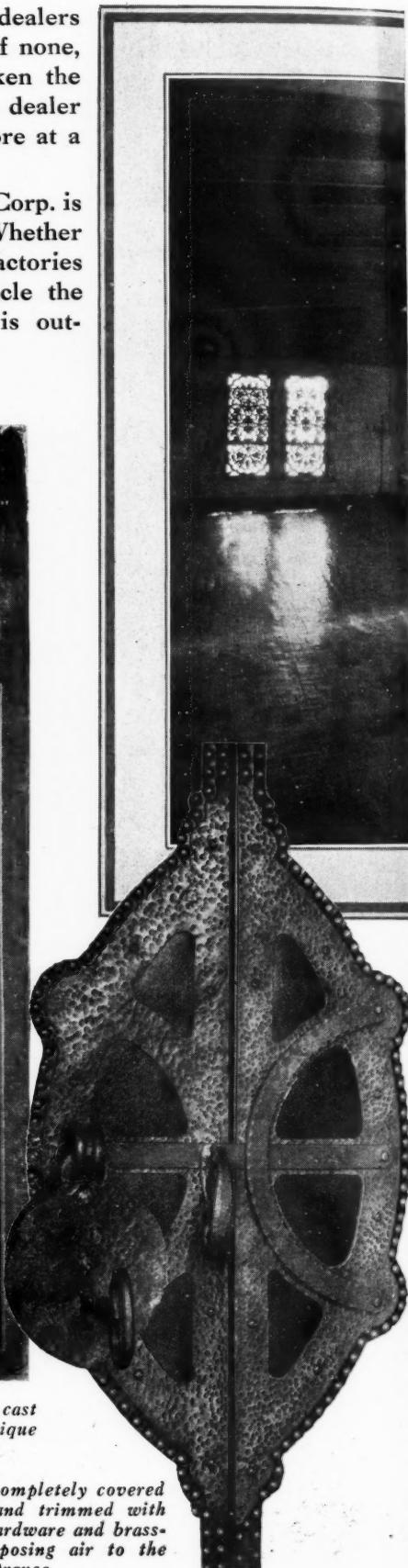
Before De Soto took over its present executive offices, the building was occupied by the engineering division of the Chrysler Corp. Like any other manufacturing building it consisted merely of four rough brick walls, plain, unattractive windows, a rough floor and a ceiling conspicuous for its steel beams, heavy timbers, pipes and a skylight.

Car manufacturers aid their dealers in various ways. In the case of none, however, has this helpfulness taken the form of making it easier for the dealer to build an artistically laid out store at a minimum expense.

The plan of the De Soto Motor Corp. is therefore a distinct innovation. Whether its success is emulated by other factories remains to be seen. In this article the standardized decorative scheme is outlined.

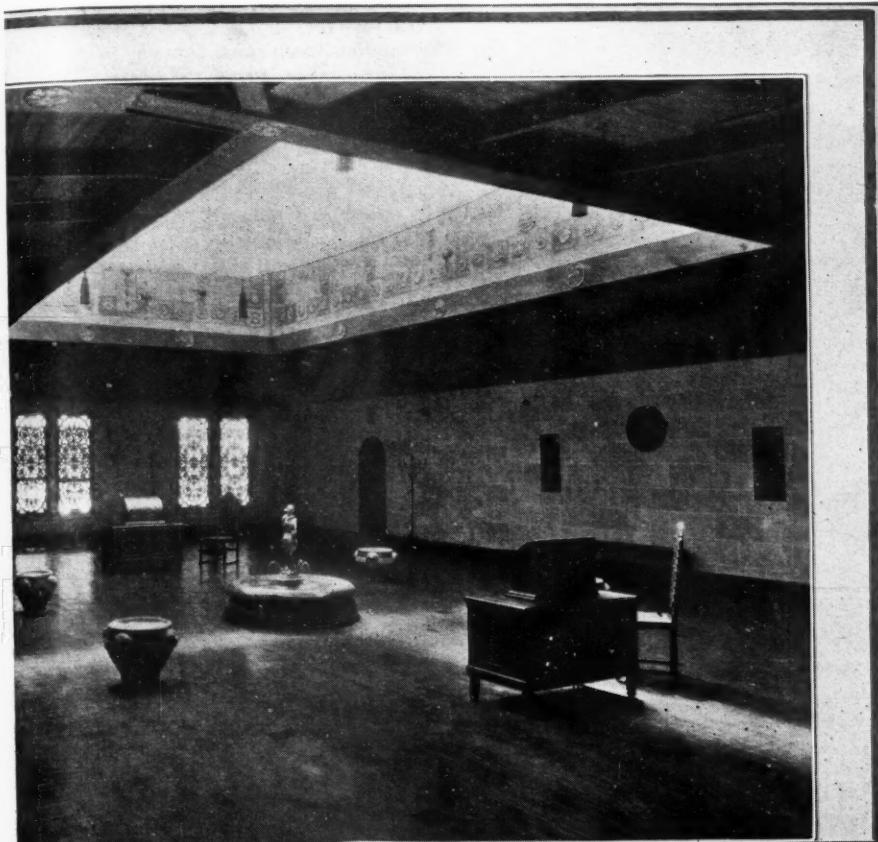


Above: This wall grill is also plaster cast colored in tones of brown to give an antique effect



Right: Two heavy doors completely covered with bright red leather and trimmed with antique hammered brass hardware and brass-headed tacks give an imposing air to the showroom entrance

# at a Plain Price



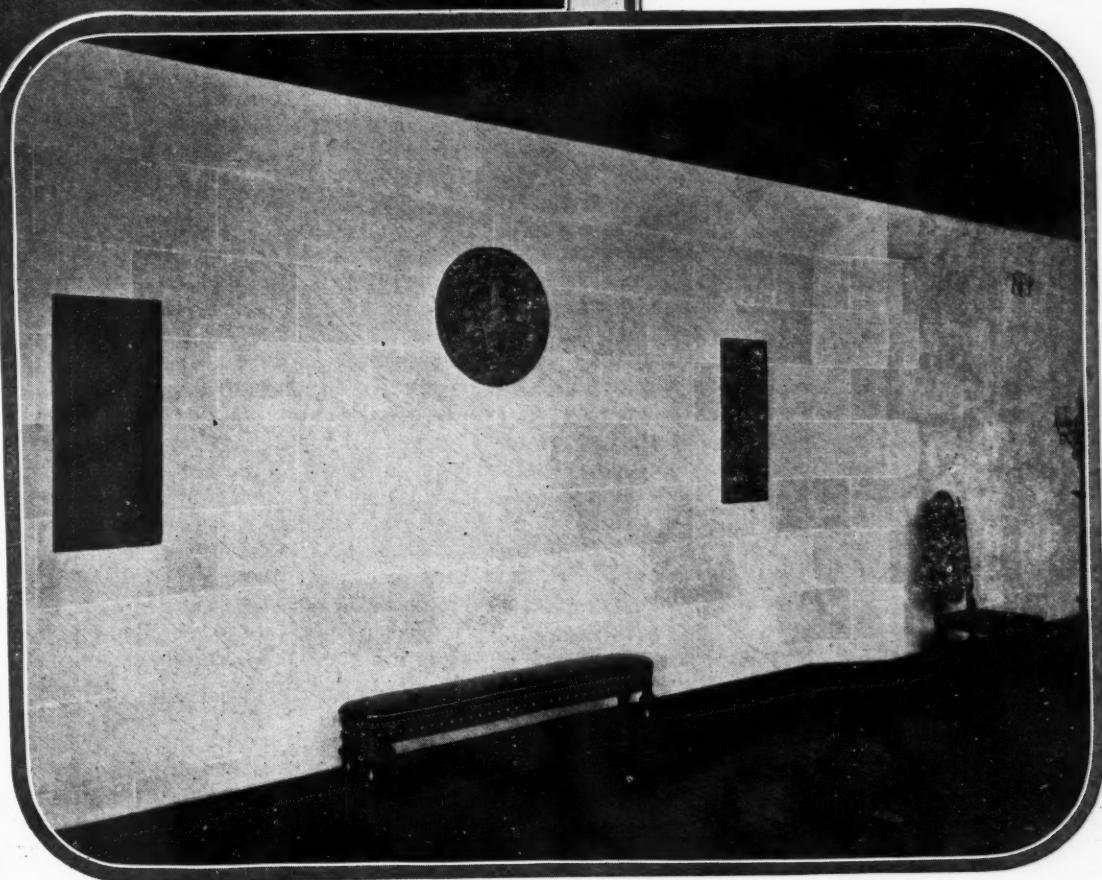
*That's the Aim of the De Soto Motor Corp., Which Seeks to Standardize the Display Quarters of Its Retail Organization and Furnish Dealers With Artistic Decorative Pieces at the Lowest Possible Cost*



By  
Lewis C.  
Dibble

*Above: General view of the De Soto model showroom. Note treatment of skylight, the sides of which have been finished in plaster characters resplendent in an array of suitable colors. Windows at rear have been screened with wooden scroll-work. Note harmony of furniture with general surroundings. The floor is of inlaid linoleum*

*Right: This side-wall view gives an excellent idea of how the wall grills are used. The caen-stone effect in the wall is obtained with the use of proper plaster*



## A FANCY SHOWROOM AT A PLAIN PRICE



In other words, it was just about as unattractive a place inside as one could imagine, and it resembled, without exaggeration, many unfinished buildings in which dealers are doing business today.

But the hand of the interior decorator has wrought a great change. A coat of dark brown stain has mellowed the ugly wood ceiling overhead. The pipes and steel beams have been effectively screened at small expense. A group of plaster-cast tiles are used to wall up the sides of the skylight, and a bright fabric canopy, decorated in a colorful stencil border of Spanish design, trimmed at the corners with heavy silk tassels, screens the glass skylight. As a matter of fact, the canopy serves a dual purpose, for it not only screens but it serves to cast a rich, mellow light on the artistic setting below.

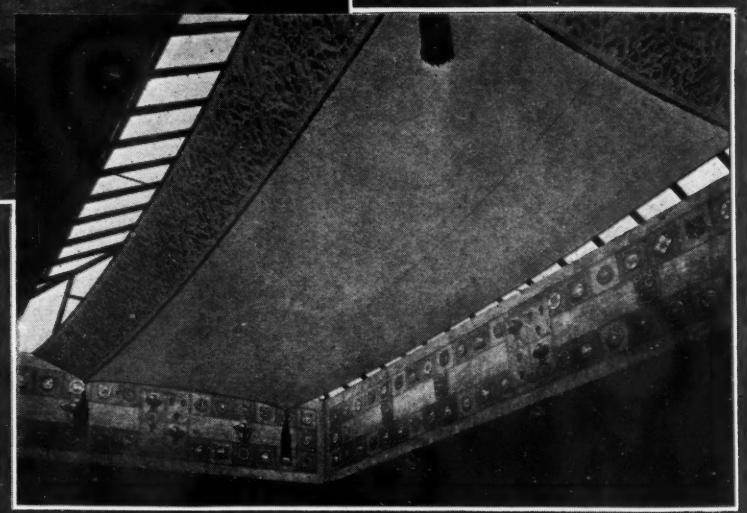
Where the rough floor once existed, tile inlaid linoleum of a design in general keeping with the surroundings has been laid. It has been waxed and looks for all the world just as rich as some very expensive marble and mosaic floors which are to be found in automobile showrooms.

The artistic touch has also been found very useful in the treatment of the walls. The rough brick finish has given way to caen-stone effect, which has been obtained by the proper use of plaster. Rough plaster has also been used on the walls, and plaster-cast wall grills and bright plaster tiles have been inserted to break up the monotony of the large expanse of space.

The windows and doors have been given an inexpensive treatment which also lends them attractive to the whole idea. Instead of curtaining the windows, they have been screened by a Spanish scroll design

*Left: The entire fountain is made of sheet metal and has been treated to look like genuine tile. The literature chest at right is a rich piece of wood furniture. The cabinet on top is of tooled red leather. The painted concrete vase, the chair and candelabra are all units of the decorative scheme*

*Below: Bright-colored cloth, richly stenciled in a Spanish design, is used to advantage beneath the skylight. The tile effect, incorporating various characters found in the De Soto crest, is very inexpensive. Plaster casts, appropriately colored, convey the impression of luxury*



cut from a thin veneer. Tops of doors have been cut circular, and the doors have been covered with bright red leather trimmed with hammered brass antique hardware and brass-headed tacks.

Much attention has also been given to the placement of furniture. In the center of the room is a fountain supporting a small figure in gleaming armor. To all intents and purposes it looks like a very expensive layout. Instead of being built of genuine tile the fountain is made of sheet metal and treated to look like tile, and to the layman it appears like the genuine article.

Flanking the fountain are literature cabinets. These are pieces of wood furniture of Spanish design which have been surmounted with chests of rich red Spanish tooled leather set with large imitation ruby jewels. The rear of the cabinet proper has been left open so that the piece can be utilized to screen colored flood lights. Chairs, benches, candelabras and large urns, the latter of concrete brightly colored, are the other fixtures which go to complete the set-up.

While it is realized that all showrooms are not identical in shape and design with that at the De Soto.

*(Turn to page 34, please)*

# It is Courtesy That Pays and Pays and Pays

*Dealers Who Haven't Yet Found This  
Out May Find Inspiration in  
One Car Maker's Practice*

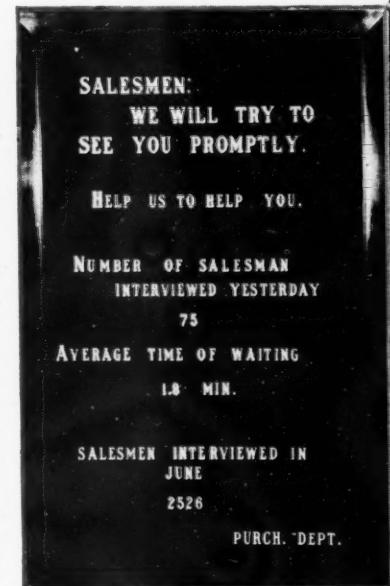
THAT courtesy pays has been an accepted maxim since the day of Chesterfield and the time Sir Walter Raleigh spread out his coat for the Queen to tread on. But courtesy, strangely, has been dissociated in the public mind from great industrial concerns.

This popular conception — or misconception — now finds direct refutation at the headquarters of the Oakland Motor Car Co. Pontiac, Mich. Officials there became conscious several months ago that perhaps they might further improve their relations with the public by eliminating, so far as possible, that annoying wait in the lobby.

A system was installed. Charles O. Miller, supervisor of purchases, had the clerk on the information desk at the entrance check the time of arrival of all callers having business with members of the purchasing department, and the time each caller had to wait before seeing his particular party.

In the two-month operation of the system the average wait has been less than four minutes—3.16 to be exact. The best day's average was 1.5 minutes. This is the more remarkable in view of the fact that from 100 to 200 outside contacts are made daily by various officials of the Oakland company.

The system has particular application to Mr. Miller's department. Under his supervision are nine buyers whose contacts are all with commercial men. Every morning Mr. Miller sends to every member of

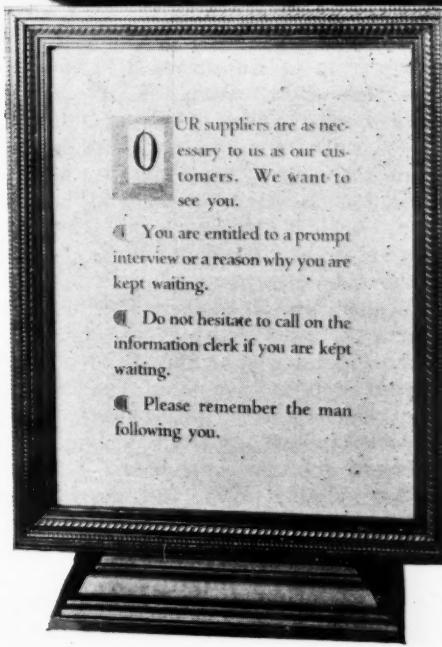


*This bulletin board in the lobby tallies the results of the efficient courtesy plan*



*Charles O. Miller, supervisor of purchases, whose department of the Oakland Motor Car Co. is finding profit in courtesy*

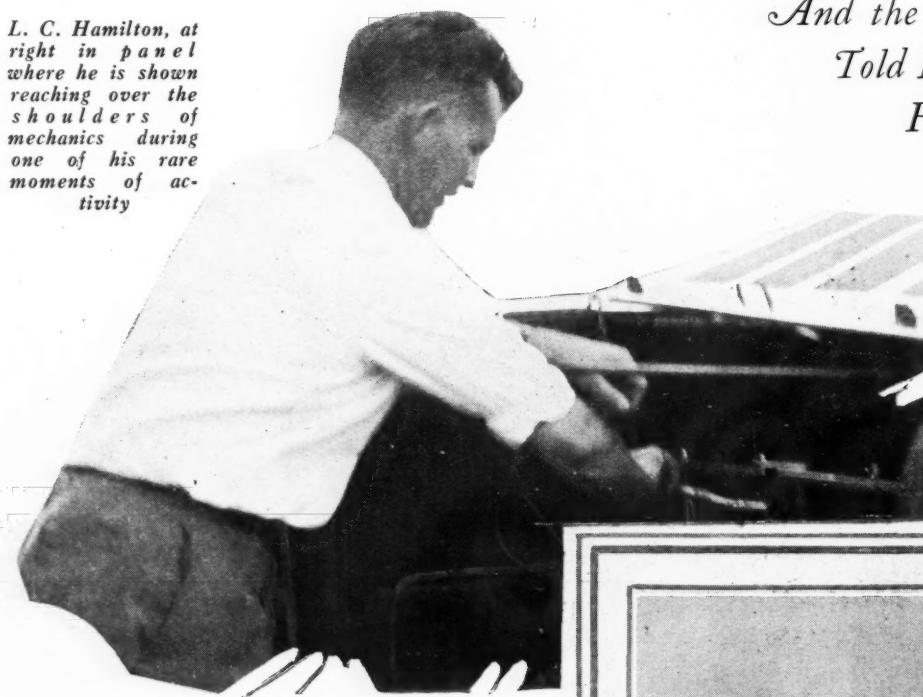
*When the supply salesman calls at the Oakland headquarters he is greeted at the information desk with this pledge of courtesy*



*(Turn to page 36, please)*

# He Gets Paid for

*L. C. Hamilton, at right in panel where he is shown reaching over the shoulders of mechanics during one of his rare moments of activity*



HERE is a man in the automobile industry who has been making good on a job of doing nothing for several years. In fact, the less work he does the better the boss is pleased. He is not a pensioned employee, retired after long years of service, nor is he drawing compensation for disability incurred in the course of his employment. On the contrary, he is active and alert, takes a keen interest in his job and rates "ace-high" with those customers of his boss whom he is delegated to serve.

To avoid the possibility of being accused of "story-telling," let it be said that the man in question is L. C. Hamilton, the "boss" in this case is Delco-Remy Corp., and Hamilton's job is that of seeing that electrical equipment on stock cars in contests and endurance runs and on race cars functions properly during the events. If there is no trouble during a race or a long-distance run, Hamilton has nothing to do and the company is pleased with the favorable showing made by its equipment.

Like most well-liked men who have been in the racing game for any great length of time, Hamilton has a nickname. It is not to L. C. Hamilton, representative of the engineering and sales departments of Delco-Remy Corp., Anderson, Ind., that drivers and pit mechanics go for advice, adjustment or hurry-up repairs of electrical equipment. The first syllable of his last name identifies this man upon whom so many rely, and it is to "Ham" that they look for assurance that ignition and, perhaps, starter and lights will not fail.

He is there to prevent trouble from taking place and to fix it in the shortest possible time, if it does

*And the Less He Does the More  
Told Facts About an Electrical  
Figure at Speed Tests and*

*By James W.*

happen. And, although he may sit beside the track for hours and hang around for days at a time and not do a bit of work, let it not be thought that he is without responsibility. Quick and accurate



diagnosis of trouble with a car going by at a mile a minute or better is required of him very frequently. The pit crew notices that a car on the track has "gone lame" and it tries to determine before the next pit stop just what must be done to the car. Hamilton is consulted in such cases. "What about it, Ham?" he is asked. "What about it" means that the pit crew wants to know whether he thinks that the miss is due to a plug, wire, distributor or some mechanical trouble. Ham's

# Doing Nothing

*He Pleases His Boss. Some Never-Expert Who is a Well-Known Contests and Endurance Runs*

Cottrell

decision is accepted without the slightest question.

To make sure that he will have nothing to do during a race or run, Hamilton tests each piece of equipment very carefully before the event starts. If owners or drivers are doing preliminary tuning of cars in preparation for the event, Hamilton also makes a preliminary examination. In any event he looks over each

part very carefully after the tuning-up is completed. He thus makes sure of lubrication and adjustment just before the

contest and at a time when the car has been operated at speed for some time.

In short races, or even in the Indianapolis 500-mile event, preventive work of this sort is usually sufficient and ordinarily no work is done on electrical equipment during the progress of the race.

Long-distance runs, such as the Auburn 15,000-mile and the Studebaker 25,000-mile events, staged at the Atlantic City Speedway, introduced some new problems. It is one thing to furnish ignition for an engine for perhaps a few hours after the ignition unit has been checked. It is quite another matter to fire cylinder charges during high-speed operation day after day for two weeks or more. Should there be more or less lubrication than ordinary? Wider breaker-point gap? Can breaker points go 25,000 miles without attention? What effect will continued high-speed operation have on generators? These were among the questions to which Hamilton was expected to find an answer.

Over-oiling of distributors and generators was his chief concern during these long-distance, high-speed runs. This condition came about in two ways: First, from too generous an application of oil through regular oil cups, and, secondly, by unintentional splashing of



"772,161 sparks per hour" rather than 84.7 miles per hour is the information L. C. Hamilton derived from a stop watch snapped during a lap of a recent speedway run. Timing cars is one of his diversions while doing nothing



When a run is over and the usual finish photo is being made Hamilton is always asked to join the party



engine oil while being poured into the engine crankcase by pit crews.

Any attention which Hamilton gives the units for which he is responsible is given under difficulties. The success of the run depends upon the functioning of these units, as well as many others, but the pit crews make no provision for his work. In many cases he reaches over shoulders of

(Turn to page 34, please)

# Speed Ads

*Condemned by State Motor Vehicle Administrators Who Want the Speed Selling Point*

## Soft Pedaled

**T**HE practice of a well-known watch manufacturer of showing in his advertisements a watch enclosed in a cake of ice is not interpreted by the public as a suggestion for all owners of such watches to store them in the ice-box overnight."

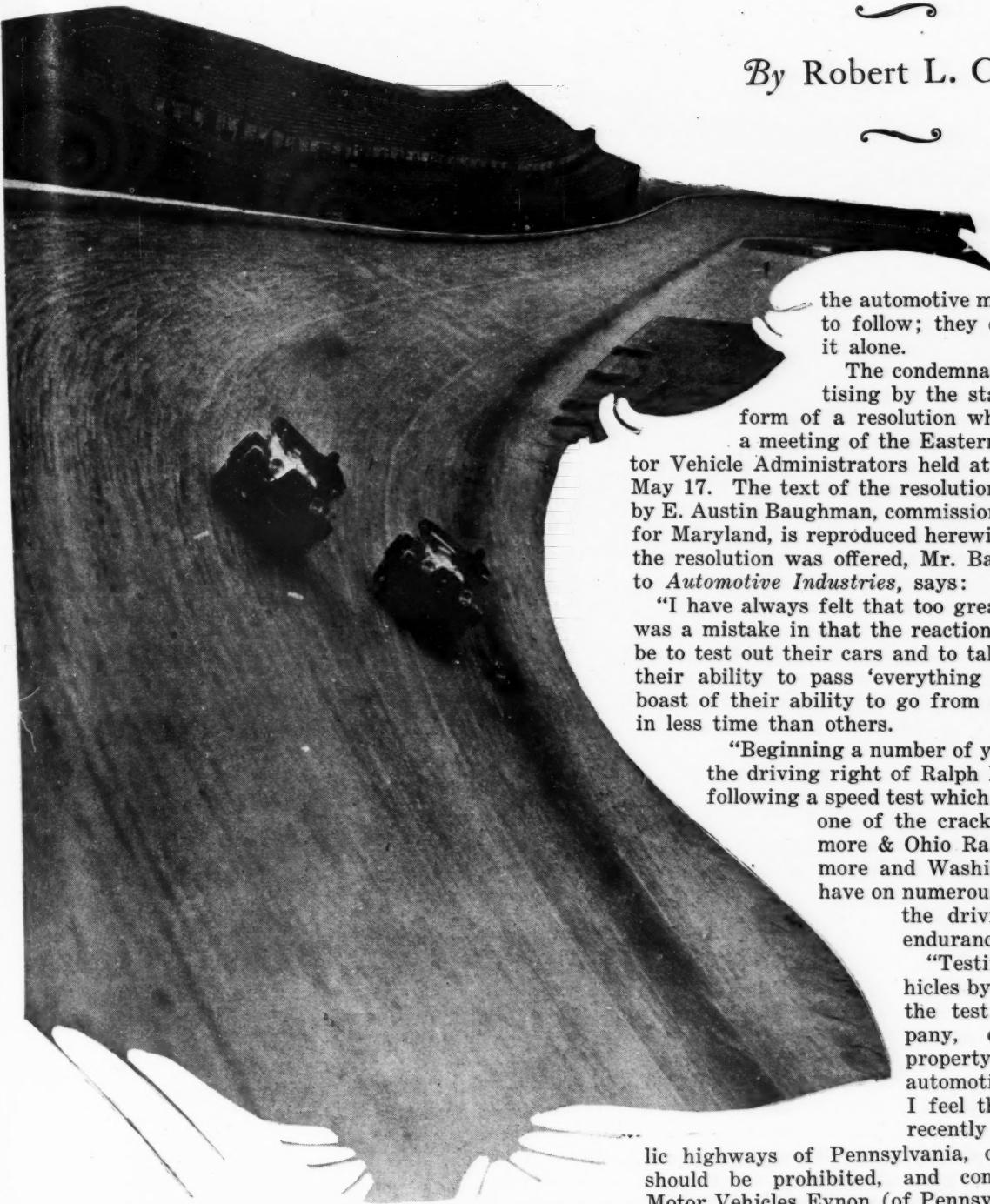
This is the reply of one prominent automobile sales executive—a factory official—to a question which has recently been brought to a head by the motor vehicle administrators of 14 states, the District of Columbia and two Canadian provinces. The question deals with the propriety of stressing speed in automobile advertising.

As everyone familiar with the subject knows, references to speed have been made in automobile advertising since the first automobiles were announced for sale.



*These clippings are reproduced to show a form of advertising that is particularly opposed by the motor vehicle administrators. The copy is based on records established on the open highway by maintaining speeds in excess of the legal limits*

## By Robert L. Cusick



Two Studebaker Dictators coming into a banked curve at high speed at the Atlantic City Speedway during an endurance and speed test

As an example, an advertisement of the Pierce Motorette published in 1902 states in sizable type that the speed is 25 m.p.h.; that, together with the claim that the car, a runabout model, is an "unrivaled climber," is the only sales talk used. Winton, in the same year, led off its advertising with the statement that it had received first award "in the official speed trials." Numerous other examples of early "speed" advertising are at hand.

But now, with the practice officially condemned by motor vehicle administrators with jurisdiction over states which go to make up the most important market area in the country, the automotive industry for the first time faces what might be characterized as an issue on the matter, although the action of the administrators

has no legal backing and its effect depends entirely upon the course which the automotive manufacturers choose to follow; they can take it or leave it alone.

The condemnation of speed advertising by the state officials took the form of a resolution which was adopted at a meeting of the Eastern Conference of Motor Vehicle Administrators held at Cleveland, Ohio, on May 17. The text of the resolution, which was offered by E. Austin Baughman, commissioner of motor vehicles for Maryland, is reproduced herewith. Explaining why the resolution was offered, Mr. Baughman, in a letter to *Automotive Industries*, says:

"I have always felt that too great emphasis of speed was a mistake in that the reaction of drivers is apt to be to test out their cars and to take too great pride in their ability to pass 'everything on the road,' or to boast of their ability to go from one place to another in less time than others.

"Beginning a number of years ago, I suspended the driving right of Ralph Mulford in Maryland following a speed test which he conducted against one of the crack trains of the Baltimore & Ohio Railroad between Baltimore and Washington. Since then I have on numerous occasions suspended the driving licenses in both endurance and speed tests.

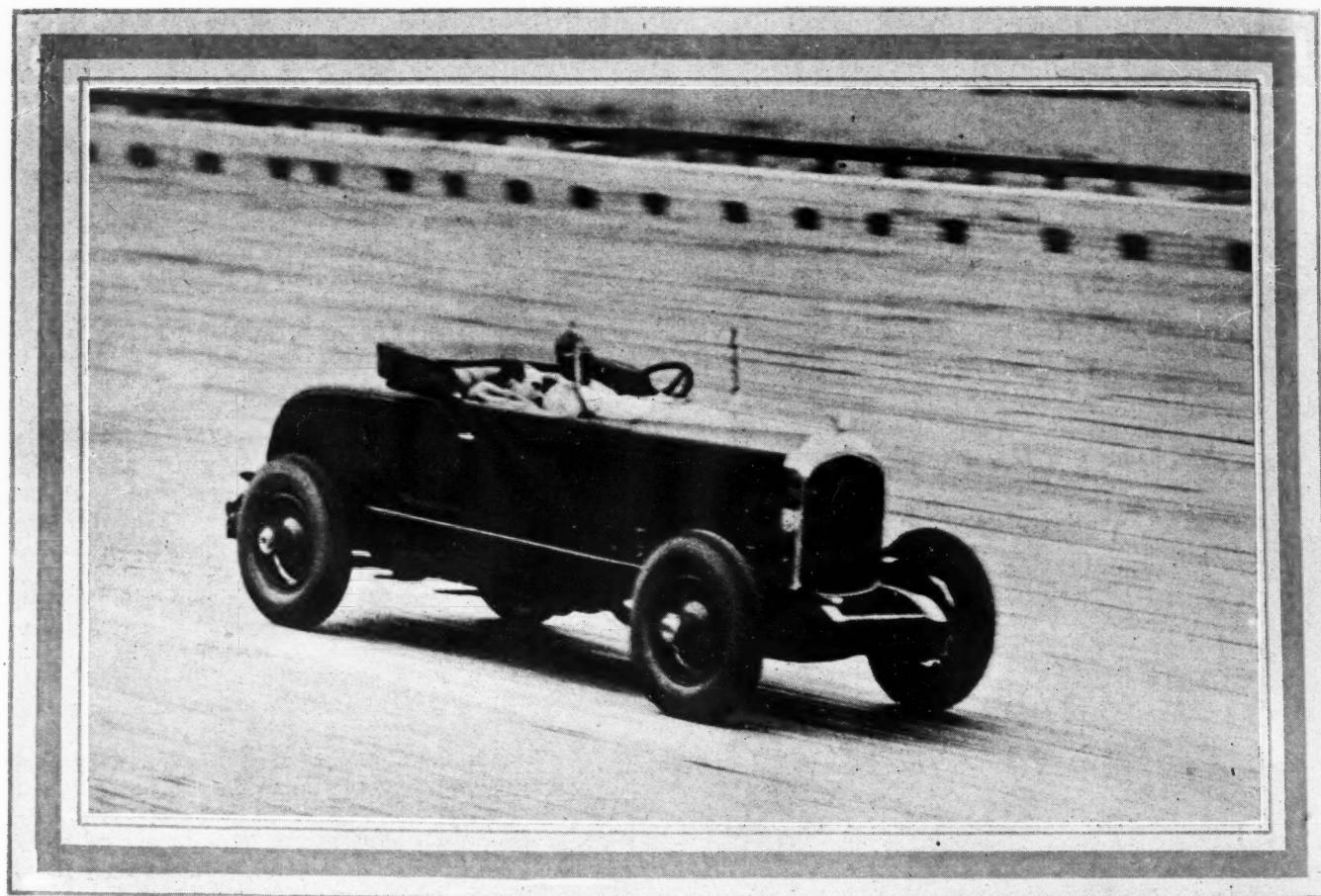
"Testing out of motor vehicles by the manufacturer on the test tracks of the company, on privately-owned property, is a development of automotive manufacture, but I feel that such tests as one recently conducted on the public highways of Pennsylvania, over Uniontown Hill, should be prohibited, and commend Registrar of Motor Vehicles Eynon (of Pennsylvania) for his action in suspending the license of the driver of this vehicle and reprimanding the automobile company. Certainly the advertising of such speed tests as this is to be condemned."

Desiring to develop as fully as possible the viewpoint of the Eastern Conference members on this subject, with the thought that many automotive executives would be interested in a thorough threshing out of the case, we queried a number of the other state officials who participated in the Cleveland meeting.

Further reference to the Uniontown Hill incident, mentioned by Mr. Baughman, is made in the letter from Benjamin G. Eynon of Pennsylvania, who says: "We in Pennsylvania are very much opposed to advertising by automobile manufacturers emphasizing the speed of their products as a selling point, and all of the member states of the conference concurred with Colonel Baughman in the adoption of his resolution.

"Only recently extensive advertising was given to

## S P E E D   A D S   S O F T   P E D A L E D



*A Chrysler 80 breaking a speed record at Atlantic City Speedway*

the fact that the Studebaker Commander topped the Uniontown Hill, Uniontown, Pa., at 60-mile speed, smashing all records. Without any investigation other than the newspaper comments and advertisements by the Studebaker people, we suspended the operating privilege of the driver of the car which made this speed. Our law is very specific in providing that 'No person shall participate in any physical endurance test or any race or speed contest with a motor vehicle on any highway'."

In justice to the Studebaker Corp. it should be stated that during the test in question every precaution was taken to insure a clear road while the run was being made and although strictly according to the Pennsylvania law, the procedure was illegal, it was certainly countenanced at the time by legal authorities. Among the spectators was the mayor of Uniontown himself, and the accuracy of the speedometer used in the test was certified by Pittsburgh police. The test was made just at daybreak, when traffic was at its lowest ebb. The company's greatest sin, apparently, was in advertising the event.

#### Reaction Coming, Says Harnett

Charles A. Harnett, commissioner of motor vehicles for New York, is of the opinion that "eventually there will be a reaction on the part of sober, sensible people to this attempt to sell automobiles based on their speed-making ability, and we believe that it will have a very

harmful effect in causing youthful drivers to attempt to develop these cars on the highway to their maximum speed." Continuing, he says:

"We further believe that the conservative purchaser of cars will eventually give up driving unless something is done to curb the speed of automobiles, since we are in a position to state with accuracy that speed is responsible for 80 per cent of all automobile accidents. Recently in this state we revoked the licenses of two drivers who advertised the fact that they drove automobiles on the highways of this state at a rate of speed in excess of that maintained by the Empire State Express, the crack train of the New York Central Railroad. After the revocation of these licenses both individuals admitted in signed statements that the advertising containing these statements was false and misleading and that no such test actually took place.

"Perhaps I have been the pioneer in this movement (against speed advertisements) and I am happy to say that I have had very sincere cooperation from Alfred Reeves, manager of the National Automobile Chamber of Commerce, as well as from various far-seeing manufacturers, particularly from George M. Graham and Walter P. Chrysler."

George A. Parker, registrar of motor vehicles, Massachusetts, states: "I believe that this was an extremely timely and proper action on the part of the conference, as the matter of calling to the attention of the public

*(Turn to page 32, please)*



## SPEED ADS SOFT PEDALED

(Continued from page 30)

the possibilities of speed in automobile advertising naturally has psychological effect which is unfavorable to safety on the highways."

A somewhat different view from the others is held by Commissioner Robbins B. Stoeckel of Connecticut. Mr. Stoeckel is a member of the conference but did not attend the Cleveland meeting and therefore did not vote on the resolution. He says: "I do not personally think speed emphasized in advertising carries a great deal of weight, for nowadays the speed of a car in any of the well-known makes is taken for granted. Every buyer knows that the engine and the general theatrical characteristics, as I like to call them, of every car are all right up to the full extent which the strain of his pocketbook will stand. What I have personally been trying to induce, and what I think the policy of the conference must be, is that in sales arguments for cars, both in advertising and in demonstration, emphasis be made on the safety factors of the car as well as on the show points."

Having thus summarized the views of some of the conference members and outlined the motives which led to the adoption of the Cleveland resolution, we can revert back to the opening paragraph of this article and trace from there the reaction of the automobile manufacturers to the suggestion that speed advertising is harmful to the public and should be soft-pedaled.

The reference to the watch manufacturer and his cake-of-ice appeal comes from Paul G. Hoffman, vice-president, Studebaker Corp. of America. Mr. Hoffman, as might be surmised, is one of a group of automobile executives who believes that speed advertising is in accord with sound business practice. He says: "Present-day merchandising demands presentation of the proof of the quality of a product in a forceful, dramatic way. We have known full well the extraordinary endurance built into our cars, but we have also realized that the only

way we could translate the stamina to the public in terms which could be readily understood was to institute tests unparalleled in automotive history.

"The advertising of these tests can no more be taken as an invitation to the public to use the speed of which these cars are capable than the practice of the watch maker can be interpreted as a suggestion that all watches be kept in ice."

"The ability of a car to withstand such tests as we have made proves more conclusively that any other method we know of the advanced design of the car and the high quality of the materials and precision workmanship entering into its construction."

## Moskovics' Views Similar

A view similar to this was expressed some time ago by F. E. Moskovics, president of the Stutz Motor Car Co. of America. Mr. Moskovics argued, as Mr. Hoffman has argued, that speed is one important criterion of a car's ability to give safe and enduring service under ordinary driving conditions, and that it is almost impossible to convey this thought to the public in a convincing manner unless some indication of the speed possibilities is given in the advertising. Speed, Mr. Moskovics contends, is an index to engineering progress; a car which is capable of 90 or 100 m.p.h. must be so well built that it is ultra-safe at any speed usually attained by the ordinary driver.

What is probably as near to a solution of the problem of how to advertise and yet not try to sell speed is found in the present policy of the Auburn Automobile Co., as explained by H. C. Hersh, advertising manager, and exemplified in recent Auburn advertising, of which a specimen is reproduced on this page.

"We do not sell speed when we advertise the breaking of stock car records," says Mr. Hersh. "It is unlawful to drive as fast as 100 m.p.h. Neither does (Turn to page 36, please)

**AUBURN**

**Breaks All Stock Car Records**

For 24 hours and all intermediate times and distances

*No Other Stock Car Has Ever Travelled So FAR, So FAST*

July 12, on Atlantic City Speedway  
under direction and supervision of A. A. A. at Auburn  
Model 115 Stock Special, Powered by Lycoming

**BREAKS ALL STOCK CAR RECORDS—**

for 1 to 24 Hours!  
for 1 to 2000 Miles!  
2033 miles in 24 hours, averaging

**84.7354 m.p.h.**

Breaking Former Record by 9.123 m.p.h.  
This car was equipped with a high compression head and 3.4 axle ratio which is standard. Wire wheels and 6-ply tires, including those on sides, which are optional, equipped stock car as it.

**PERFECT PERFORMANCE**  
During this entire 24-hour Auburn car started without difficulty.

**Why?**

To sell speed? No!  
It is unlawful to drive 100 miles an hour.  
And you do not want to average 84 miles an hour.  
But it proves ENDURANCE and VALUE, and that was the purpose of this test.

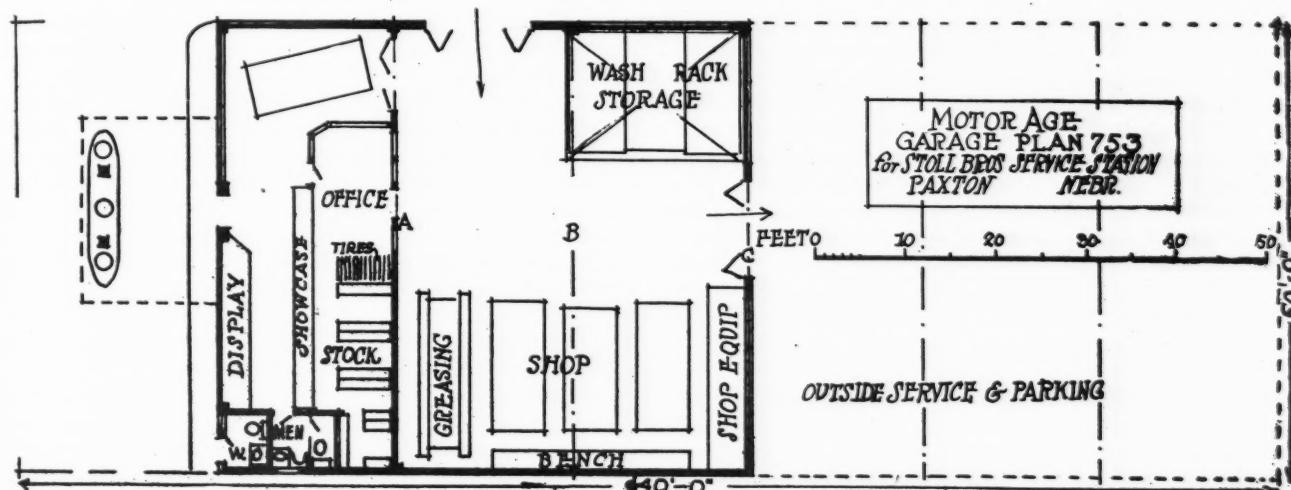
A car capable of this slow and steady speed and endurance can every part, establishes its finality.

This advertisement, as H. C. Hersh, advertising manager of the Auburn automobile Co., explains, advertises speed without trying to sell it. After raising the question of why the test was conducted, the copy says: "To sell speed? No! It is unlawful to drive 100 m.p.h. And you do not want to average 84 m.p.h. But it proves endurance and value and that was the purpose of this test"

# Don't Build Too Small a Service Station

*It Takes Considerable Space to Handle Cars Inside Before We Start to Provide Space for Servicing Them*

BY TOM WILDER



IT is better to begin at the bottom of the ladder and climb than start at the top and slide down." If you start with a small place and are hampered for want of room, you at least know that you are in a healthy condition, while if you have too much space, you are carrying a serious overload of investment, interest, insurance, etc., which eat a big hole in your profits.

On the other hand, it is not wise to have a place that is so small that everything in it has to be moved every time a new job is started or that three or four other cars have to be moved to get at one that is wanted. We believe you will soon want to build on the rest of your lot and in order to have a little bit more handy place now and also make the extension come out right, it would be best to make the present building 50 x 59 ft. which will leave space for another unit exactly the same size at this. In this way the trusses to support the roof may be placed so that no changing will be necessary and the extension can be made with no fuss or interruption of business. Trusses A, B and C should be installed now in spite of the fact that two of them could be dispensed with because the partitions would support the roof. The point is that later you will need more showroom space and you will also want to remove the rear wall. Without the trusses here, great expense

I WOULD like to build a service station and I wonder if I could get you to draw some plans for me. I have a corner lot 50 x 140 ft., and would like to build it about 50 ft. wide and 50 ft. long. We sold 50,000 gallons of gas last year, \$3,500 worth of tires, \$3,500 worth of radio business, 75 barrels of oil. We have the Willys-Overland contract and carry \$400 worth of Ford parts, \$600 worth of accessories and a stock of \$2,500.

I would like to have a ladies and gents' rest room, for no other station has them in this town and there is no sewer.

We would like to have a canopy over the gas pumps and want one drive-in way to the gas pumps and want a curb pump. We want the front brick and the rest tile.

In other words, we want an all around service station for washing and greasing cars. On the following page I am giving you description of my lot. Hoping to hear from you in the near future.—H. S. Stoll, Stoll Bros. Service Station, Paxton, Neb.

would be necessary while with them the expense and annoyance would be negligible.

We have given you a double drive-in and suggest that you eliminate the curb pumps. One of the objects of the drive-in station is to bring customers in contact with your display, taking them off the street.

If you have only one drive you can accommodate cars going only in one direction at a time and this is unfortunate when a customer comes from the wrong way and the drive is full. With this layout you should at least double, probably triple, your sales of last year.

We have given you a small car showroom, not very large but very effective; with it you can at least let people know you sell cars. The shop and storage arrangement is all right for small cars or medium-sized cars, but the space would not be wide enough for large cars, but with a layout of this sort when your building has grown, the shop can be moved to the end and the sides retained for storage.

You will need a septic tank or cesspool to take care of your sewage if there are no public sewers. If the soil is sandy and loose this will be easy. It is best to provide two reservoirs, one to receive and settle the sewage and one to promote seepage of the clear liquid into the soil. The latter is sometimes replaced by a network of porous tile or a bed of cinders or gravel.

## HE GETS PAID FOR DOING NOTHING

(Continued from page 27)

mechanics who are inspecting an engine during a pit stop in order to reach a distributor or generator.

A pit stop in a long-distance run, such as those which have taken place on the Atlantic City Speedway, is well organized in advance. The scope of work to be done at an ordinary pit stop is analyzed and each detail is assigned to one man. The additional work which is done at certain intervals, such as lubricating universal joints, watering batteries and checking valve tappet clearance, also is scheduled and assigned. After each man gains an understanding of what he is to do, some thought is given to team work, so that each man can work without interference from others.

An average of well under a minute has been maintained for pit stops, and many have been made in 20 seconds and a few below this figure during passenger-car runs. During this period two men fill the gasoline tank by means of a curb-type pump and hose, and time required to fill the tank usually limits the pit stop. It should be remembered that in stock-car events the tank must be filled through the regular tank spout, large diameter tank caps as used on racing cars not being allowed under A. A. A. rules for stock events, unless stock equipment. Two other men attend to engine oil, one taking out the rod from the crankcase and determining the amount required and the other putting the oil in as soon as he receives the signal from the first. Meanwhile, the radiator cap has been taken off by a mechanic and water added if necessary, and another mechanic is wiping off the windshield. If the schedule calls for lubrication of the universal joints, a mechanic dives under the car as it is stopping and crawls out again as quickly as possible.

Just as the car comes to a stop one or two men who are taking care of tires makes a hurried inspection of the rubber and make a change if necessary. They go to work without paying the slightest attention to the others working on the car.

During all of this activity the driver gets out and another takes his place. He exchanges greetings with the driver who relieves him and is told by the latter how the car is behaving and what precautions, if any, are necessary on the track. The signal to shove off is

given by a man in charge of the pit crew after he makes sure that all those working on the car are out of the way.

Amidst all of this orderly haste Hamilton must do any inspecting, lubricating and adjusting that he finds necessary. He tries to see to it that none of this work is required. His endeavor in this respect is heartily, if silently, approved by the pit crews because while they turn to him instantly in case of trouble, they are quite satisfied if he has nothing to do and keeps out of the way.

Preventive work keeps Hamilton quite busy at times. During one racing season he had 14 race cars to look after. His work was, of necessity, sandwiched in between work of mechanics, and it often happened that he would be up until 3 or 4 o'clock in the morning to check an ignition outfit and then be called out of bed at, perhaps, 6 o'clock the same morning to do a similar job in another camp. During a 25,000-mile run he is "on call" 24 hours a day for more than two weeks.

Hamilton has traveled many thousands of miles and visited practically all of the well-known tracks in the past four or five years in connection with his job of doing nothing at races. He was present at Indianapolis every year, except the present year, since 1919. He was at Daytona, Fla., when Lockhart's car had its first accident and again when Lockhart was killed, and when Keech made the world's record.

In addition to the Auburn 15,000-mile run and the Studebaker 25,000-mile run, Hamilton has been in attendance at every race held on the Atlantic City Speedway since it was opened.

Perhaps it is wrong to say that Hamilton "does nothing." It may be more accurate to say that Hamilton's work is done at such time and under such circumstances that few are aware of what he does. His work is done before an event starts. The race or run is the test of the effectiveness of his work and of the equipment in his charge. He likes to do nothing during a race or a long-distance run. Everybody concerned seems quite as well pleased with his idleness under these conditions as he is.

"What about it, Ham?"

## A Fancy Showroom at a Plain Price

(Continued from page 24)

factory, company executives point out that the various features which have been used have been designed in such a way that they would lend themselves admirably in working out the problems of each individual dealer. It is very likely that an arrangement will be made whereby a dealer can submit a layout of his showroom and the factory will be able to counsel with him so that he will know just about what he will want to order to fulfill his individual requirements.

## Gentlemen May Prefer Blondes

(Continued from page 21)

This big, good-natured, always-smiling son of Dixie thrives on competition. When the going is difficult he puts on that much more steam and gets over the hurdles. That is why business is good with him in all seasons

of the year. When the quota board tells him that a brother salesman is forging ahead, he puts on steam because, as he says, "When you see some other salesman crowding you too close on the old board you have just got to hit the ball that much harder or swallow your pride, and that is one thing I can't do."

Is it any wonder, then, that he is known among his many friends in the automobile business as the "Get-'em boy" from Oak Park?

An offer to raise the necessary funds for financing construction of two vehicular tunnels joining Brooklyn and Queens with Manhattan has been made by Frank Bailey, a Brooklyn real estate man. The sum of \$100,000,000 should be sufficient for such a project. Mr. Bailey offers to invest \$1,000,000 himself and said that he probably would be able to get the cost of the tubes underwritten within a week if he could secure the franchises.

# Useful Shop Equipment

## Valve Reseater

**A**ND improvement in valve reseating equipment is found in the new Milwaukee valve reseater, which is made by Milwaukee Motor Products, Inc., of

Milwaukee, Wis. The feature is a double lock pilot which centers itself in a warped or worn valve guide. This locks at the top and bottom, thus providing a stationary rigid spindle upon which the cutters rotate. In this manner each cutter is rotated at exactly right angles to the valve guide axis. It is unnecessary to remove this guide in order to change cutters and as a consequence all cuttings are made on exactly the same center. Another advantage is the fact that no oversize pilots are needed as there is sufficient expansion in the pilot

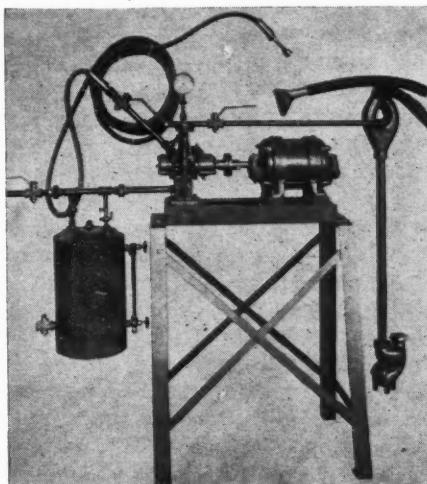


to take care of any oversize which may be encountered. Tru-Way pilots are furnished in sets of three sizes, each with a maximum expansion of .035. With this range of expansion it is said that 95 per cent of all engines can be serviced. Set No. 100, complete with three pilots of 5/16, 11/32 and 3/8 in., includes also four cutter arbors, one cutter arbor wrench, one feed and lock nut assembly, and one pilot wrench. This equipment is packed in a metal kit, weighs 4 1/2 lb. and sells for \$22.50. Single pilot sets in any of the three sizes listed, may be had at \$12 each. Pilots only are \$5.30.

## Car Cleaner

**U**NIQUE features are found in the combined car washing and vacuum cleaning machine made by the Rotawasher Corp. of Cleveland. The unit as pictured is complete and can be purchased for less than \$500. A jetmixer introduces kerosene into the suction line of the pump in any desired amount and will remove road oil, tar, old grease quickly with cold water. It is said that for 90 per cent of car wash-

ing kerosene introduced into the suction pipe at the rate of 60 drops a minute, will suffice. The kerosene is most thoroughly emulsified with the water, thus resulting in a fast and thorough job of cleaning. Sixty drops a minute averages between one and two tablespoonfuls per gallon of water. The jet-vac is another feature. It will draw a vacuum of 22 in., which assures thorough vacuum cleaning. As it operates on water it will suck water without any injury to the machine. Thus water may be taken up from the running board, around doors, windshield, etc., or it may be used for taking up the accumulated water that might get on the inside of delivery bodies or buses. The discharge of the vacuum goes down



the drain. Consequently, there is no dust bag nor receptacle of any kind which must be regularly emptied.

## Shop Equipment Catalog

**T**HE new Manley garage equipment Catalog is off the press. It may be had free by merely addressing the Manley Mfg. Co. at York, Pa. This is known as Catalog No. 6 and includes many pieces of service station equipment which do much to increase profits and reduce labor.

## Spray Gun

**A** COMPLETELY self-contained spray gun is being produced and sold by the O. K. Machine Co., Inc., of Fort Wayne, Ind. This gun consists of a container for paint, lacquer or varnish; a blower direct connected to a motor, and a convenient handle and flexible cord for connecting. This de-



vice has a positive air control and stops or starts the flow under full pressure. The O. K. spray is all-aluminum, highly polished; extra nozzles and jets are available for handling different kinds of material. It is furnished complete with 110 volt universal motor with 15 ft. of heavy rubber insulated extension cord. The price is \$35 with an extra charge of \$1 for any special voltage other than 110 universal.

## Seat Grinding Set

**A**HANDY valve seat grinding set is being introduced by The United States Electrical Tool Company, Cincinnati, Ohio.

This set is made up especially for valves having seats of 45-degree angle. And the equipment is of universal sizes to fit in with the repairman's most common requirements. There are six stones accommodating six sizes of ports —1 1/2, 1 1/8, 1 1/4, 2, 2 1/4 and 2 1/2 inches. In addition, there are three pilots for



use with the stones—5/16, 3/8 and 7/16 of an inch in size—and two ball knuckle driving members. A strong, convenient box holds all parts compactly so as to protect them from possible injury and at the same time to keep them readily available for use.

## S P E E D   A D S   S O F T   P E D A L E D

*(Continued from page 32)*

the public want to average 84 m.p.h. for 24 hours, but the ability of a car to travel 100 m.p.h. or average 84 m.p.h. for 24 hours proves endurance and value. That is the reason for our stock car runs and the advertising of the results.

**Policy Will be Continued**

"It has been and will continue to be the policy of the Auburn Automobile Co. in advertising the setting of a new stock car record to draw the attention of the public to this fact. When we recently advertised the new record of 84 m.p.h. for 24 hours we told the public that such speed proves our product capable of many years of average use and that the breaking of records was merely incidental. Whenever in the future we make use of similar advertising copy we shall again tell the public that such records are set up merely to prove the soundness and stamina of our product."

The automotive industry, however, does not by any means present a solid front in defense of speed advertising. Not a few of the members of the National Automobile Chamber of Commerce harbor sentiments on the subject in accord with those of the Eastern Conference.

Here, for instance, is how C. A. Triphagen, sales manager of the Reo Motor Car Co., feels about about it: "We have used speed in our advertising copy on several occasions but I do not like it. No doubt we have been prompted to refer to speed in some of our copy because of the more or less general use of the same appeal by others in the industry. If speed could be played down more than it has in the past I believe it would be a benefit.

And William W. Lewis, director of advertising and assistant sales manager of the Cadillac Motor Car Co., says: "Once or twice we have made reference to speed but we have no desire to promote high speed. Cadillac and La Salle cars are big and powerful and naturally have speed. But after all speed is just one of many factors which the modern motor car buyer considers when he purchases a new car.

**It is Courtesy That Pays and Pays and Pays***(Continued from page 25)*

the department the record of the preceding day which shows the number of contacts each man made and the length of time he kept his callers waiting. A spirit of rivalry has grown up as a result, with each man vieing with the others to cut down that waiting average.

The plan has won the hearty approval of the commercial man. Greeting him as soon as he enters the lobby is the sign:

"Our suppliers are as necessary to us as our customers. We want to see you."

"You are entitled to a prompt interview or a reason why you are kept waiting."

"Do not hesitate to call on the information clerk if you are kept waiting."

"Please remember the man following you."

For the salesman's information, a score card is posted in the lobby daily for the previous day telling the number of salesmen interviewed and the average time each waited. For instance, number of salesmen

**No Monopoly on Speed**

"No manufacturer has a monopoly on speed. Speed is very dangerous. We do not like to promote speed and I think it would be beneficial if more attention was paid to stressing more thoroughly many of the other important factors which are equally interesting to the prospective buyer."

A number of other companies hold the same view. The Packard Motor Car Co. is against speed copy in its advertising. It has consistently refrained from speed publicity and in all probability will continue to do so.

Since during the past two years reference to speed has crept into the advertising of the lowest as well as the highest priced cars, even Ford having made rather free use of the word in his introduction of the Model A, the statement of J. E. Grimm, Jr., advertising manager of Chevrolet, may be of interest, especially as he lists the appeals upon which the Chevrolet advertising program, the largest in the industry, is based. He says: "The Chevrolet Motor Co. does not believe in stressing speed any more than any other factor which the public demands in the car of today. Our job is to appeal to the multitude, and for that reason our copy fluctuates on the following eight points, which after all are the factors the public looks for in any motor car: (1) Good appearance; (2) snappy performance; (3) ease of handling; (4) riding comfort; (5) economy; (6) dependability; (7) high resale value; (8) all the above features at the lowest possible price."

There has been in recent months a marked decrease in speed advertising copy. A year ago, it must be admitted, the word "speed" was running rife through newspaper and magazine pages and the situation at that time drew comment from several well-known persons. Capt. E. V. Rickenbacker, chairman of the Contest Board of the American Automobile Association, was one who expressed a feeling that continued use of the speed appeal might result in a nation of speed-conscious motorists with a consequent increase in the number of road accidents attributable to too fast driving.

**It is Courtesy That Pays and Pays and Pays***(Continued from page 25)*

interviewed yesterday 75, average waiting time 1.8 minutes.

Once into a buyer's office, the salesman sees another framed courtesy sign which reads:

"It is our aim to have the Purchasing Department callers delayed as little as possible in seeking an interview. It is the duty of each buyer to see salesmen promptly.

"It is also his duty to see that salesmen have the proper regard for other salesmen who may be waiting their turn.

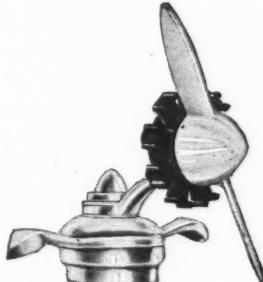
"I wish this policy to be something more than a framed notice on the lobby wall. It is up to each buyer to see that this is the case." This is over the signed signature of C. O. Miller.

In this manner "good will," with which the Oakland name has been intimately associated for many years, becomes of still greater significance in its application to the company.

# The Latest in Accessories

## Radiator Ornaments

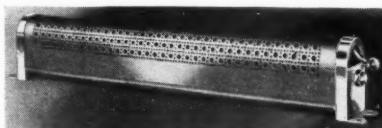
A DISTINCTIVE and attractive radiator ornament is the Atlas Whirlwind, made by the Atlas Mfg. Corp., 1465 Broadway, New York City. The Atlas Whirlwind derives its name from the fact that it whirls with the wind. In appearance, however, it is



very much like the Whirlwind engine. Mounted forward of it is a highly polished propeller and streamlined hub. The propeller revolves on a ball bearing. Without lights this sells for \$5, with lights and complete with armored cable the price is \$6.

## Vapor Heater

FEATURES claimed for the Vernay F vapor heater include ease of installation, liberal heat quickly, lack of odor, silent operation, and positive control. No difficulty at all should be experienced in installing this heater in 1½ hours. The fact that one model fits all cars is also a thing of interest to dealers. It is, however, available in two sizes. The large size is 24¾ in. long, 4½ in. high and 2¾ in. and is finished in crystallized lacquer. The ends are brightly nickelized. This size sells for \$22.50 complete, while the smaller size is available at \$15. The operation is most simple. A ½ in. coping 2 oz. of alcohol and water, is installed in the muffler. Immediately upon starting the engine, the liquid begins to heat and very soon gives off a vapor which rises to the heater. Within the heater is a sealed steel tube with circular fins. Consequently, there is a large radiating surface which as-



sures an abundance of warm air. Due to the very small amount of liquid the heater is very quick to get into opera-

tion. The condensed vapor drains back into the heating element in the muffler. As the system is sealed there is no need to watch the height of the liquid or to make any replacement in it. Should it be desired to turn off the heat, it is merely necessary to turn a valve which prevents the return of the liquid to the heating element. The heater will then remain cold. The installation is simple requiring merely the drilling of two ½ in. holes side by side in the floor boards. A ½ in. hole is then drilled in the end of the muffler. The heater is screwed to the floor board by four screws. The heating element is inserted in the muffler and the copper tubes are fastened to the heater by tightening two nuts. Complete instructions and all fittings are furnished with each heater. These heaters are packed and shipped in individual cartons, weighing 7½ lb. This heater is made by Laminated Shim Co., Inc., Long Island City, N. Y.

## Bearing Shims

INTERESTING construction is used in the double-action, non-curling, National shims, made by the National Motor Bearing Co., Inc., 460-470 Natoma St., San Francisco, Calif. These



shims are assembled with the leaves soldered together only at the tip. As shown in the illustration, the babbitt end which is cast on the main shim leaf, becomes an integral part of the shim. It is possible with this shim construction to remove leaves or replace them, if necessary. It is this end tip that prevents the loss of oil from bearings and assists mechanics to turn out jobs which do not readily lose oil pressure.

## New Brake Drum

THE Federal Pressed Steel Co., of Milwaukee, has perfected a new type of brake drum. This new drum is a combination of the Federal pressed steel drum and a replaceable lining made of Gunite, a newly discovered wear-resisting metal particularly suited to brake drum needs.



Why Gunite serves the purpose so well is easily explained. Gunite is a true graphitic steel and is shown under a powerful microscope to be exactly the same as the substance found in high-grade tool stratified "Pearlite." It differs from steel in its molecular structure as shown by the illustration.

This microphotograph of an unetched surface of Gunite magnified 100 diameters, shows how the short, fat, graphitic flakes are evenly distributed through the Pearlitic matrix. These flakes of graphite act as lubricating pockets, which prevents Gunite from scoring and tearing under friction, or being "sticky," as practical metallurgists express it. In service Gunite becomes as highly polished as plate glass. Brake linings last from three to five times longer and wear evenly, thus materially reducing brake adjustments.

In the development of the new Federal pressed steel brake drum the design provides for a liner of Gunite. This replaceable liner is fitted inside of the drum and securely held by slots



which prevent it from crawling even under the heaviest duty of braking service. The unit will outlast the vehicle.

# READERS' CLEARING HOUSE

## Questions Answered By C. Edward Packer

### *Coil and Condenser Testing*

How is a condenser tested?—A. G. Allenburg, Clemann Motor Co., Gladbrook, Iowa.

**A** PAIR of 110-volt test points in series with a lamp should be used for condenser testing. A condenser is usually tested for short or open circuits. A short circuit will show up by the light lighting when the test points are brought in contact with the two terminals of the condenser. To test for an open circuit bring the two test points into contact with the condenser terminals. Then while the points are still in contact with the terminals, slide the points so that they come together. The light will then light. As the contact between the two points is broken there should be a sharp, snappy spark. The absence of this sharp snappy spark indicates that the condenser is open. To understand the difference between the spark from a good condenser discharging and from the mere separation of the contact points, the points should first be brought together and pulled apart without being in contact with the condenser. After becoming familiar with the type of spark thus produced, bring the points into contact with the condenser terminals and proceed as instructed.

How is an ignition coil tested?

The best way of testing an ignition coil is to test it in service. This is done by placing the coil on a modern test bench that is equipped with a battery which supplies the current, and a pair of breaker points with condensers. There is, of course, a spark gap and if the gap is one that operates under compressed air, so much the better. It will the more nearly approximate service conditions. 110-volt test points are helpful in checking up the conditions of the coil, and placing the points in series with the secondary, the light should not light. If it does light it indicates a very bad short in the secondary. If it does not light, but if there is a decided inductive kick or spark when the circuit is broken, it is a pretty good indication that the secondary is in good order. Putting the points in series with the primary should result in the lighting of the test light. If it fails to light an open circuit is indicated. Another good test to make is to place the coil in series with a

six-volt battery, assuming that the coil is from a six-volt car, with an ammeter in the circuit. It is normal for the primary to draw 4 to 6 amp. To draw considerably less, or none at all, indicates a break in the primary, while drawing more than 4 to 6 amp. indicates that a number of the turns of coil are shorted together.

## *Lafayette Service*

I am going to grind the valves on my Lafayette and the man who is going to do the job asked me to write you and find out how the valves are adjusted after they are ground, as we understand that these cars are different from others. Also, where is the oil pump located and how is the Lafayette car timed? Are the connecting rod bearings shimmed or not? And are they of the crow-foot type or do they operate next to one another?—George B. Farnham, 208 Gray Ave., Joplin, Mo.

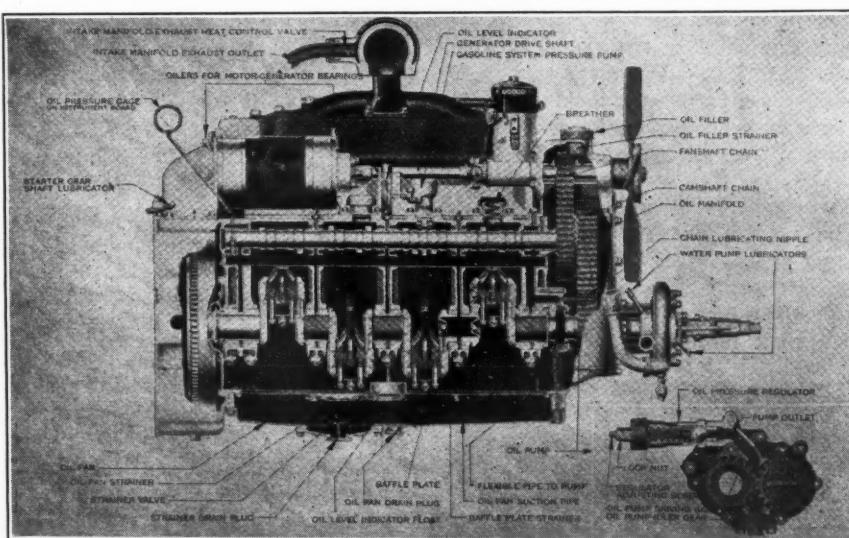
**O**WING to the shape of the La-fayette cams it is necessary when adjusting the valve tappet clearance to have the cam roller in contact with a certain part of the cam surface; as no two cams are at the same angle on the camshaft, the camshaft must be turned to a new position for adjusting each valve tappet.

To place the camshaft in the proper position for the adjustment of a particular valve tappet, open the compression relief cocks, make sure the ignition is switched off and crank the engine slowly by hand until the tappet to be

adjusted starts to descend. Then, observing the marks on the flywheel, crank the engine further until the mark for that valve is approximately opposite the pointer (within an inch either side of the pointer is sufficiently close). Then adjust the valve tappet

If all of the valve tappets are to be adjusted or tested a good plan is to position the camshaft for the No. 1 exhaust valve in accordance with the preceding paragraph. After adjusting the No. 1 exhaust valve tappet crank the engine until the next valve mark (IN/S 3-7) is opposite the pointer and adjust the No. 7 intake valve tappet. Continue in this way for two revolutions of the flywheel, adjusting the 16 valve tappets in the following order:

1. EX/S 1-5—No. 1 Exhaust
2. IN/S 3-7—No. 7 Intake
3. EX/S 2-6—No. 2 Exhaust
4. IN/S 4-8—No. 8 Intake
5. EX/S 3-7—No. 3 Exhaust
6. IN/S 1-5—No. 1 Intake
7. EX/S 4-8—No. 4 Exhaust
8. IN/S 2-6—No. 2 Intake
9. EX/S 1-5—No. 5 Exhaust
10. IN/S 3-7—No. 3 Intake
11. EX/S 2-6—No. 6 Exhaust
12. IN/S 4-8—No. 4 Intake
13. EX/S 3-7—No. 7 Exhaust
14. IN/S 1-5—No. 5 Intake
15. EX/S 4-8—No. 8 Exhaust
16. IN/S 2-6—No. 6 Intake

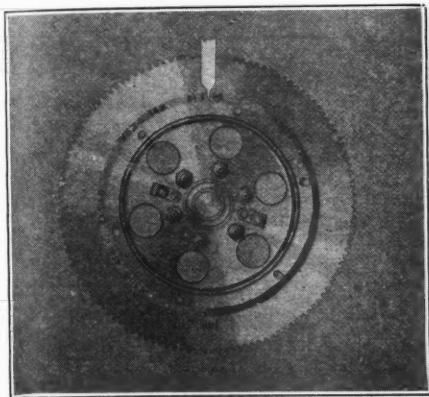


Showing location of oil pump at this front end of the engine, inside the crankcase

## [READERS' CLEARING HOUSE]

When the camshaft has been positioned in accordance with the above directions, the clearance between the lower end of the valve stem and the head of the adjusting screw in the tapet should be .003 of an inch. This applies to intake and exhaust valves and is the correct clearance when the engine is cold.

We are showing an illustration from



Timing marks on flywheel

which you can clearly see the location of the oil pump at the front end of the engine inside the crankcase.

We are also showing an illustration of the timing marks on the flywheel. This clearly indicates the valve setting. The ignition should be timed with the spark lever in the fully advanced position and the contact points should open when the flywheel indicator is exactly

opposite a point 1 3/16 in. in advance of the dead center mark, as shown in the timing diagram previously referred. In order to be sure of the exact point at which the contacts break, a test lamp or buzzer should be in series with the points. If it is necessary to correct the timing, remove the distributor head and rotor, and loosen the screw in the center of the cam just enough to allow the cam to be turned with the rotor when the latter is replaced. Replace the rotor, making sure that the rotor button will be in position under the proper contact in the distributor head when the latter is replaced. Then if the spark is late, rotate the cam slightly in the clockwise direction; if the spark is early, rotate the cam counter-clockwise. Of course, this cam locking screw should be pulled up tight after the correct setting is obtained. The connecting rod bearings are not shimmed. They are of what you call the crow-foot type or as is frequently called the fork and blade type.

### Model "A" Ford Service Brake System

Will you please give me complete instructions for adjusting the brakes on a new Model A Ford?—General Motors Truck Co., 7th & Ash Sts., Salina, Kansas.

To adjust the brakes on the Model A Ford proceed as follows:

1. Place hand brake lever in fully released position. Make all adjustments with brakes COLD.

2. Adjust lining-to-drum clearance by turning the external adjusting nut (indicated in the illustration) until the brake drags and then back off until wheel is just free. Do the same to all four.

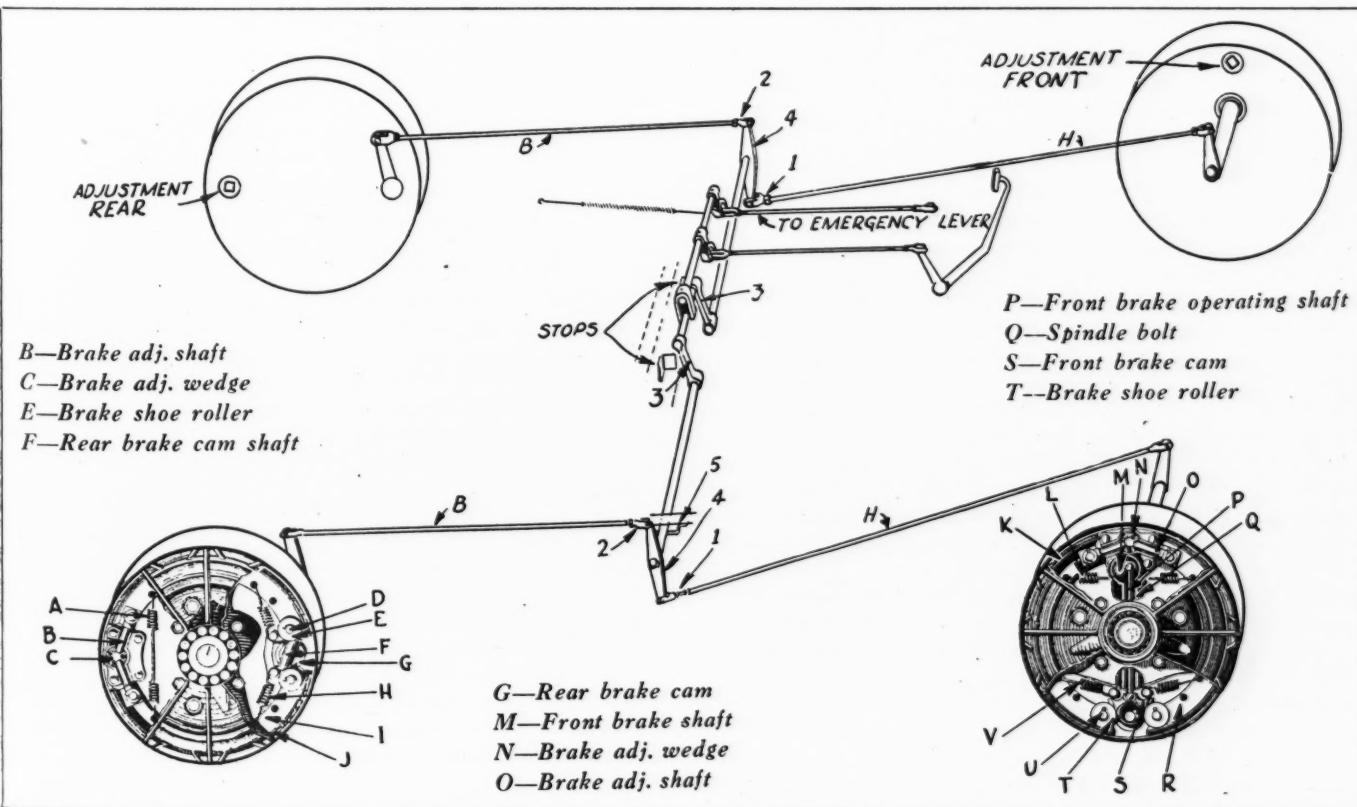
3. Apply pedal depressor to check front to rear ratio. With pedal down 1 in., rear brakes should start to take hold. At 1 1/2 in. depression of pedal rear brakes should be almost locked and fronts just starting to take hold. At 2 in. REAR brakes should be locked and fronts should show heavy impression but should not lock.

4. Check equalization on dry concrete. With pedal fully applied REARS should slide and fronts should show heavy impression but should not lock.

If above adjustments do not give satisfactory results check the rods and levers as follows:

5. Disconnect the front pull rods at their clevis ends 1 and rear pull rods at their clevis ends 2.

6. Make sure that cross shaft equalizer levers 3 are against their stops under the center frame cross-member. Also make sure that each end of cross shaft is in the fore and aft center of its floating bracket 5 on the frame. At the same time the double levers 4 on ends of cross shaft should be standing STRAIGHT up and down. If they do not there is a bent rod or lever somewhere in the linkage. The attainment of the centered position of the cross



Model "A" Ford Service Brake System

## [READERS' CLEARING HOUSE]

shaft ends in the floating frame brackets 5 is important.

7. Wooden blocks or wedges temporarily inserted between brackets and each side of shaft will assist in maintaining desired center position.

8. Now with equalizer levers against their stops and cross shaft centered in its brackets, pull forward on one of the rear brake levers "B" just enough to take up the free travel in the rear brake shoe assembly. With rod held in this position adjust rod length at clevis so that clevis pin can be inserted at cross shaft double lever. Do the same to other rear pull rod.

9. Do the same to both of the front brake pull rods "H," taking up the free travel by pulling backward on the rods. Insert clevis pins, and cotters, then readjust lining-to-drum clearance as outlined in paragraphs 1 to 4, inclusive.

This information is from the book "Brakes" by Paul Dumas. "Brakes" is published by the Chilton Class Journal Co. and sells for \$2.

### We Know the Squeal—What IS It?

I wish you would explain to me the cause of brake squeal or vibration. I, of course, know the conditions causing the squeal and also most of the remedies, but I would like to know just what takes place when this squeal or vibration occurs. I have also found that by circling an old coil spring around the outside of the drum of an internal brake that the squealing or vibrating is almost entirely overcome. Just what is the cause of that?—Charles M. Clark, 422 Newport Avenue, Detroit, Mich.

**S**QUEALING of brakes is caused by the brake drums vibrating. You say that you know the different causes for this vibration, so that simplifies the explanation. The material from which the drum is made, its diameter and thickness, determines the pitch or tone of the squeal. This is the same as the well-known fact that the size and construction of a tuning fork influences the note produced. When you strike a brake drum it will ring like a bell. A squealing brake is a brake drum that has actually been struck at a high rate of speed and so set into vibration by the brake lining, brake rivets or the end of the bands.

Placing a coil spring around the outside of an internal brake damps out the vibrations set up in the drum and hence tend to eliminate squealing.

Because of the valuable and interesting nature of some information that appears in the Allbestos Brake Manual, we are reproducing it herewith.

## What to Look For Trouble Shooting What to do

### Squealing Brakes

1—Ends of bands touching drum .....	Bend out points
2—High areas of unequal pressure .....	Readjust
3—Pebbles or sand .....	Remove; clean lining
4—Twisted bands .....	Straighten
5—Unequal adjustment .....	Adjust
6—Worn anchor pins .....	Renew or build up
7—Bands frozen on anchor pins .....	Release and oil
8—Twisted anchor pins .....	Straighten
9—Exposed Rivets .....	Rerivet or reline
10—Glazed or hard lining .....	Reline
11—Eccentric or distorted drum .....	True up drum
12—Loose wheels or wheel bearings .....	Tighten

### Brakes Chatter

13—Loose lining .....	Tighten or reline
14—Anchor pin twisted .....	Straighten
15—Worn anchor pins .....	Renew or build up
16—Weak rear chassis springs .....	Add extra leaves
17—Too little clearance between lining and drum .....	Adjust
18—Too much clearance on lower half of band .....	Adjust
19—Improper leverage .....	Check up
20—Action of some kinds of brake dope on the lining .....	Reline

### One Brake Grabs

21—Band twisted .....	Straighten
22—Gummed surface .....	Clean or reline
23—Rear axle housing loose on spring or frame .....	Repair
24—Equalizer rusted or off center .....	True up and adjust

### One Brake Slips

25—Lining saturated with grease .....	Clean or reline
26—Equalizer off center .....	Adjust
27—Band out of shape .....	Reshape

### Brakes Not Holding

28—Lining worn .....	Reline
29—Lining glazed .....	
30—Rivets on contact with drum .....	
31—Drums scored .....	Turn down and use thicker lining or replace
32—Wrong leverage .....	Check up and lubricate all working parts

### Explanaton:

#### Squealing Brakes

- 1—The points of the band are very frequently bent when the lining is applied. The levers on the bands are so shaped in many instances that they force the points to the drum before lifting the lower section or drawing down the upper. It is very common for the life to go out of the metal from which the band is made. This usually occurs on the lower section about four inches from the end. When this happens the lower end will always hit first.
- 2—If split rivets are used. If the treatment flows under heat and cools in bunches, or if the lining itself is not calendered perfectly straight, i.e., to a uniform thickness.
- 3—Hard spots rubbing on metal.
- 4—Cause uneven pressure on the drum, which vibrates and sets up a squeal.
- 5—Same as No. 4.
- 6—When an anchor pin is worn the band has no rigid support. This lets it grab at any angle it happens to be riding in at the time the pedal is depressed so that it does not have an equal pressure at all points.
- 7—Bands frozen at the anchors give only a point application.
- 8—Twisted anchor pins give only an inner and outer application. This is one of the most common causes for squeal and failure to hold when wet.
- 9—Metal to metal.
- 10—Cause a lubricating bearing instead of braking friction.
- 11—Drums can be distorted due to unequal bolt-pull against drum seat, if seat

## [ READERS' CLEARING HOUSE ]

is not a true plane. Drums are made eccentric by unequal pressure of brakes when drum has been heated by severe braking or by a locked brake.

12—Same as No. 4.

*Brakes Chatter*

13—With a loose lining you have no solid hold on the brake at the contact point.

14—Give only an edge application which is not constant.

15—Give the band a chance to work so that the pressure is not constant.

16—Weak rear springs allow so much lifting of the wheels from the road surface that there is a constant locking and sliding and rolling of brake.

17—Apparently this condition does not allow the arms on the band to be brought ahead far enough to maintain a steady pressure.

18—This is using the top section to do most of the work and this top section is sufficient to hold steadily.

19—Same as No. 4.

20—Action of heat on its contents.

*One Brake Grabs*

21—Not enough friction to equalize with other bands.

22—Same as No. 1.

23—Axle moves causing a variation of adjustment.

24—Applies brakes unevenly.

*One Brake Slips*

25—Friction on one side only.

26—Applies brake on one side only.

27—Lack of frictional surface.

*What They Hold*

Can you supply me with a chart that shows the crankcase capacity of different cars and also the cooling system capacity?—Western Service Station, Denver, Colo.

THROUGH the courtesy of S. F. Bowser & Co., Inc., Fort Wayne, Ind., we are enabled to reproduce below the material which appears on a new chart that they have just gotten out. We hope that this will prove helpful to you. You will be interested to know that by writing directly to the Bowser organization they will be glad to send you a duplicate of this chart printed on heavy cardboard.

Such a chart, hung in a convenient place in the filling station, will often come in handy. Few owners and few service men can remember off-hand the capacities of even the popular makes of automobiles.

CAR	Gasoline Gallons	Crank-case Quarts	Trans-mission Pounds	Differential Pounds	Radiator Quarts	ALCOHOL QUARTS	10° Above	Zero	10° Below	CAR	Gasoline Gallons	Crank-case Quarts	Trans-mission Pounds	Differential Pounds	Radiator Quarts	ALCOHOL QUARTS	10° Above	Zero	10° Below
Auburn 76.....	18	6	2	2 <sup>3</sup> / <sub>4</sub>	15	4	5	6		Locomobile 48.....	30	7	8	10	32	8 <sup>1</sup> / <sub>2</sub>	11	13	
88.....	18	6	2	2 <sup>3</sup> / <sub>4</sub>	18	5	6	7 <sup>1</sup> / <sub>2</sub>		90.....	21	8	3	5 <sup>1</sup> / <sub>2</sub>	24	6 <sup>1</sup> / <sub>2</sub>	8	10	
115.....	18	7	3	3	22	6	7 <sup>1</sup> / <sub>2</sub>	9		8-70.....	20	8	3	3	21	5 <sup>1</sup> / <sub>2</sub>	7	8 <sup>1</sup> / <sub>2</sub>	
Buick 115-1927.....	17	5	2	3 <sup>1</sup> / <sub>2</sub>	14	4	5	6		8-80.....	20	8	2	5	23	6	8	9 <sup>1</sup> / <sub>2</sub>	
120 & 128-1927.....	20	6	3	4	17	4 <sup>1</sup> / <sub>2</sub>	6	7		Junior 8.....	17	7	3	3	18	5	6	7 <sup>1</sup> / <sub>2</sub>	
115-1928.....	16	5	3 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	16	4 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>		McFarlan T. V. 6.....	23	10	3	6	30	8	10	12	
120 & 128-1928.....	19	6	3 <sup>3</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>4</sub>	20	5 <sup>1</sup> / <sub>2</sub>	7	8		8 in Line.....	18	8	2	5	22	6	7 <sup>1</sup> / <sub>2</sub>	9	
Cadillac.....	20	8	5	5	24	6 <sup>1</sup> / <sub>2</sub>	8	10		Marmon 75.....	19	11	6	10	22	6	7 <sup>1</sup> / <sub>2</sub>	8	
Chandler Special 6.....	12	7	2	8	12	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	5		L.....	12	6	3	6	20	5 <sup>1</sup> / <sub>2</sub>	7	8	
Big 6.....	20	8	4	8	20	5 <sup>1</sup> / <sub>2</sub>	7	8		68.....	14	6	3	6	18	5	6	7 <sup>1</sup> / <sub>2</sub>	
Royal 8.....	20	9	4	8	22	6	7 <sup>1</sup> / <sub>2</sub>	9		78.....	14	6	3	6	22	6	7 <sup>1</sup> / <sub>2</sub>	9	
Chevrolet.....	10	5	5	4	8	2	3	3 <sup>1</sup> / <sub>2</sub>		Moon 6-60 and 6-62.....	14	6	1 <sup>1</sup> / <sub>2</sub>	2	11 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	5	
Chrysler 50 and 52.....	11	4	1	4	14	4	5	6		6-72.....	18	5	1 <sup>1</sup> / <sub>2</sub>	2	14	4	5	6	
62.....	11	6	3	5	13	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>		Series A and 68.....	18	6	1 <sup>1</sup> / <sub>2</sub>	2	14 <sup>1</sup> / <sub>2</sub>	4	5	6	
72.....	16	6	3	5	15	4	5	6		Nash Standard 6.....	12	5	1 <sup>3</sup> / <sub>4</sub>	6	10	3	3 <sup>1</sup> / <sub>2</sub>	4	
80.....	20	8	3	7	19	5	6 <sup>1</sup> / <sub>2</sub>	8		Special 6.....	16	7	3	4	17	4 <sup>1</sup> / <sub>2</sub>	6	7	
Cunningham V 7.....	24	8	8	8	28	7 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>		Advanced 6.....	16	8	3	7	23	6	8	9 <sup>1</sup> / <sub>2</sub>	
Davis 92.....	17	6	3	4	13 <sup>1</sup> / <sub>2</sub>	4	5	6		Oakland AA Six.....	13	6	4	4	12	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	5	
93 and 94.....	14	6	2 <sup>1</sup> / <sub>2</sub>	3	12	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	5		Oldsmobile.....	15	6	2	3	13	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	
98 and 99.....	17	8	3	4	20 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	7	8 <sup>1</sup> / <sub>2</sub>		Packard Six.....	22	7	4	6	20	5 <sup>1</sup> / <sub>2</sub>	7	8	
Diana 8-75.....	18	7 <sup>1</sup> / <sub>2</sub>	2	2	18	5	6	7 <sup>1</sup> / <sub>2</sub>		Eight.....	22	8	4	7	25	6 <sup>1</sup> / <sub>2</sub>	8 <sup>1</sup> / <sub>2</sub>	10	
8-80.....	18	8	2	2	16	4 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>		Peerless 6-72.....	20	9	8	6	18	5	6	7 <sup>1</sup> / <sub>2</sub>	
Dodge 128 Four.....	12	6	2	7	12 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>		6-80.....	17	8	8	8	14	4	5	6	
Victory Six.....	12	6	2	7	12 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>		6-69.....	20	10	8	8	24	6 <sup>1</sup> / <sub>2</sub>	8	10	
Senior Six.....	15	7	2	5	17	4 <sup>1</sup> / <sub>2</sub>	6	7		6-60.....	17	6	8	8	12	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	5	
Duesenberg St. 8.....	22	7	3	2 <sup>1</sup> / <sub>2</sub>	23	6	8	9 <sup>1</sup> / <sub>2</sub>		6-90.....	17	9	8	8	14	4	5	6	
Elcar 1928 6-70.....	19	6	3	3	14	4	5	6		Pierce Arrow 80, 81.....	18	9	5	7	21	5 <sup>1</sup> / <sub>2</sub>	7	8 <sup>1</sup> / <sub>2</sub>	
8-78.....	19	7	3	3	16	4 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>		33 and 36.....	26	10 <sup>1</sup> / <sub>2</sub>	8	10	30	8	10	12	
8-82.....	19	7	4	4	16	4 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>		Pontiac.....	11	6	2	4	10	3	3 <sup>1</sup> / <sub>2</sub>	4	
8-91 and 8-92.....	19	8	5	5	22	6	7 <sup>1</sup> / <sub>2</sub>	9		Reo Flying Cloud.....	17	8	3	5	19	5	6 <sup>1</sup> / <sub>2</sub>	8	
Erskine.....	10	5	1	3	13	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>		Rickenbacker, 8-90.....	21	8	3	3	24	6 <sup>1</sup> / <sub>2</sub>	8	10	
Essex Super 6.....	11 <sup>1</sup> / <sub>2</sub>	6	2	3	19	5	6	8 <sup>1</sup> / <sub>2</sub>		6-70 and 8-80.....	16	7	3	3	22	6	7 <sup>1</sup> / <sub>2</sub>	9	
Falcon-Knight.....	10	8	2	3	15	4	5	6		Rolls Royce—									
Ford Model T.....	9 <sup>1</sup> / <sub>2</sub>	4		1 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>		Phantom.....	21	6	8	6	32	8 <sup>1</sup> / <sub>2</sub>	11	13	
Model A.....	10	5	1	1 <sup>1</sup> / <sub>2</sub>	12	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	5		Silver Ghost.....	21	6	8	6	36	9 <sup>1</sup> / <sub>2</sub>	12	14 <sup>1</sup> / <sub>2</sub>	
Franklin 9-10-11.....	13 <sup>1</sup> / <sub>2</sub>	5	3	2	Air Cooled					Star M2.....	11 <sup>1</sup> / <sub>2</sub>	4	2	2	12	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	5	
12.....	15	6	3	3	Air Cooled					55 and 65.....	11 <sup>1</sup> / <sub>2</sub>	6	2	2	12	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	5	
Gardner Six B.....	16	5	6	3	17	4 <sup>1</sup> / <sub>2</sub>	6	7		75.....	14 <sup>1</sup> / <sub>2</sub>	7	6	3	14 <sup>1</sup> / <sub>2</sub>	4	5	6	
Eight all Models.....	16	8	3	4	17	4 <sup>1</sup> / <sub>2</sub>	6	7		Stearns-Knight—									
Graham-Paige 610.....	11	7	1	4	14	4	5	6		H-8-90 and J-8-90.....	24	10	6	4*	30	8	10	12	
614.....	14	7	4	4	14	4	5	6		F-6-85.....	24	10	6	4*	26	7	9	10 <sup>1</sup> / <sub>2</sub>	
619, 629 and 835.....	18 <sup>1</sup> / <sub>2</sub>	7	6	5	25 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>	8 <sup>1</sup> / <sub>2</sub>	10		Studebaker Com.....	16	8	3	5	20	5 <sup>1</sup> / <sub>2</sub>	7	8	
Hudson, all Models.....	18 <sup>3</sup> / <sub>4</sub>	9	3	5	22	6	7 <sup>1</sup> / <sub>2</sub>	9		Dictator.....	16	8	3	5	14	4	5	6	
Hupmobile Four.....	16	4	2	3	18	5	6	7 <sup>1</sup> / <sub>2</sub>		President 8.....	17	8	3	5	19 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	7	8	
Six.....	16	6	2	3	13	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>		Stutz, all Models.....	20	12	4	2	28	7 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	
Eight.....	16	8	2	3	16	4 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>		Velie 50, 60, 66 & 67.....	17	8	1 <sup>1</sup> / <sub>2</sub>	3	20	5 <sup>1</sup> / <sub>2</sub>	7	8	
Jordan A.....	18	8	3	4	20	5 <sup>1</sup> / <sub>2</sub>	7	8		88.....	17	8	1 <sup>1</sup> / <sub>2</sub>	3	22	6	7 <sup>1</sup> / <sub>2</sub>	9	
R.....	12 <sup>1</sup> / <sub>2</sub>	7	2	3	12	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	5		Whippet Four—96.....	8	5	2	3	11	3	4	4 <sup>1</sup> / <sub>2</sub>	
J, JE and JJ.....	16 <sup>1</sup> / <sub>2</sub>	10	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	17	4 <sup>1</sup> / <sub>2</sub>	6	7		Six—93A.....	10	6	2	3 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	
Kissel 55.....	17	10	4	4	20	5 <sup>1</sup> / <sub>2</sub>	7	8		Wills-Ste. Claire—									
75 and 8-90.....	17	12	4	4	24	6 <sup>1</sup> / <sub>2</sub>	8	10		T-6 and W-6.....	18	10	12	4	32	8 <sup>1</sup> / <sub>2</sub>	11	13	
6-70.....	15	8	4	4	16	4 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>		Willys-Knight 56.....	10	8	2	3 <sup>1</sup> / <sub>2</sub>	13	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	
8-65 and 8-80.....	17	11	4	4	20	5 <sup>1</sup> / <sub>2</sub>	7	8		66A.....	20	8	4	6	21	5 <sup>1</sup> / <sub>2</sub>	7	8 <sup>1</sup> / <sub>2</sub>	
La Salle.....	20	8	3	6	21	5 <sup>1</sup> / <sub>2</sub>	7	8 <sup>1</sup> / <sub>2</sub>		70A.....	11	8	2	6	16	4 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	6 <sup>1&lt;/</sup>	

*Both Profit and Pleasure*

WHITINSVILLE, MASS.—I am very sorry that I cannot renew my subscription to MOTOR AGE. I am very sure that I will miss your paper for I found it very instructive and entertaining.—*Hugh Currie.*

*We Know Why*

M. T. CLEMENS, MICH.—Due to many unavoidable causes I have failed to renew my subscription to MOTOR AGE. It is hard to explain why, or how much, I have missed it. Please enter my subscription for the coming year.—*Thomas Kenney.*

*He Can't Get Along Without It*

CRESBARD, S. DAK.—After taking your magazine for several years I tried to get along without it last year but found out I couldn't as there is too much up-to-date information on new car details and also information from the Clearing House section to get along without it.—*C. L. Cotton.*

*When a Miss is a Miss*

UTICA, N. Y.—I certainly hate to miss any one issue of MOTOR AGE for I have subscribed for so many years.—*Evans W. Linton.*

*Tip to Advertisers*

BULTFONTEIN, S. AFRICA.—May I suggest that MOTOR AGE whenever publishing advertisements of anything new in spares or accessories please try and publish the price and address of manufacturers also for the

benefit of oversea readers who may want the particular thing in a hurry and who must otherwise wait several months.—*D. K. Dreyer.*

*C. H. Preferred*

ROCKVILLE, CONN.—The Clearing House and talks on managing garages are the most interesting features of MOTOR AGE.—*Alfred R. Noack.*

*Full House*

BELoit, WIS.—I like all of it—*H. J. MacRoberts.*

*For the T. B. M.?*

SAN ANTONIO, TEX.—We like the business stories.—*Le Sage Motor Co.*

*Another One*

PORLAND, ORE.—I find the repair department and questions and answers most interesting.—*M. R. Hanson.*

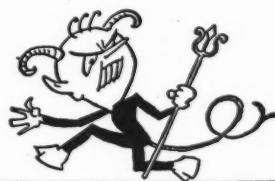
*Appreciation is Sweet*

PORLAND, ORE.—I find the repair is very much appreciated and I especially like the Clearing House.—*J. M. McClintock.*

**L**ETTERS to the editor from those whose "attention has been called"; from those who point with pride and those who view with alarm, from those who are easy to please and those who are hard to please; from those who are happy when they find a good thing and those who are happier when they find something they consider not so good; from those who boast and those who knock; from those who see the doughnut and those who see the hole; in other words, Dear Subscriber, from you and you and you—as well as from the man who borrows your copy of MOTOR AGE or reads it over your shoulder.

*Goodbye—But Not Forever*

ANN ARBOR, MICH.—I always liked your magazine very much and if I ever go back in the auto-repair business, I sure will subscribe for it again.—*John Lippes.*

*Good, Better, Best*

RIDLEY PARK, PA.—Your publication is unquestionably the best in the field, the technical data is well presented and the special articles well written.—*Joseph N. Fitzgerald, Jr.*

*From Cover to Cover*

BROWN POINT, IND.—I enjoy your publication from cover to cover and try to read each one that way.—An enthusiastic reader, *W. H. Meeker.*

*M.A. Will Follow You*

TOCOPILLA, CHILE, S. A.—I wrote you before I left the States to send MOTOR AGE to me here. If there is more subscription money, let me know. I sure do miss it.—*F. M. Mathews.*

*Why Try*

GARDEN GROVE, CALIF.—I have been a reader of MOTOR AGE for a year now, and I don't believe I could get along without it.—*Hubert W. Head.*

*A Big Help*

ROCHESTER, N. Y.—I have been taking MOTOR AGE quite some time and find it a big help to me.—*A. R. Bartold.*

## Prices, Weights and Equipment of Current Passenger Car Models

**Important changes in  
Specifications and Price  
Tables since last issue:**

## Marmon "68 & 78" New Specifications and Prices

## Peerless "6-81" Specification and Body Models

## Plymouth Price Changes

## Stutz 131" W. B. New Coupe

Passengers and Model	F.O.B. Price	Doors	Net Weight*	Standard Equipment
<b>AUBURN</b> "76"				
2-4p. Roadster.	\$1195	3	2980	aeghmnrrw
5p. Touring.	1195	4	3070	aeghmnrrw
4p. Cabriolet.	1395	2	3125	aeghmnru
5p. Sp. Sedan.	1295	4	3300	aeghimnru
5p. Sedan.	1395	4	3300	aeghimnru
"88"				
2-4p. Roadster.	1495	3	3265	aeghmnrrw
2p. Speedster.	1695	2	3245	aeghmnrrw
5p. Touring.	1495	4	3380	aeghmnrrw
4p. Cabriolet.	1695	2	3410	aeghmnru
5p. Phaeton Sed.	1895	4	3600	aeghmnur
5p. Sp. Sedan.	1595	4	3590	aeghimnru
5p. Sedan.	1695	4	3590	aeghimnru
"115"				
2-4p. Roadster.	1995	3	3655	aeghmnrrw
2p. Speedster.	2195	2	3590	aeghmnrrw
5p. Touring.	2195	4	3700	aeghmnrrw
7p. Touring.	2195	4	3700	aeghmnrrw
2-4p. Cabriolet.	2195	2	3880	Beghjmnr
5p. Phaeton Sed.	2395	4	3990	aeghimnrr
5p. Sp. Sedan.	2095	4	3995	aeghimpru
5p. Sedan.	2195	4	3995	aeghjmpru
7p. Sedan.	2195	4	3995	aeghjmpru
<b>BUICK</b> "116"				
5p. Phaeton.	\$1225	4	...	ag
2p. Bus. Coupe.	1195	2	...	ag
5p. Selan 2d.	1220	2	...	agt
5p. Sedan 4d.	1320	4	...	agt
"121"				
4p. Sp. Roadster.	1325	...	...	aghmn
3p. Bus. Coupe.	1395	...	...	aghmn
4p. Spec. Coupe.	1450	...	...	aghmn
5p. C. C. Sedan.	1450	...	...	aghmnt
5p. Sedan.	1520	4	...	aghmnt
"129"				
5p. Phaeton.	1525	4	...	aghmn
7p. Touring.	1550	...	...	aghmn
5p. Coupe.	1865	...	...	aghmn
5p. C. C. Sedan.	1875	...	...	aghmnt
4p. Conv. C. C. Cpe.	1875	...	...	aghmn
5p. Sedan 4d.	1935	4	...	aghmnt
7p. Sedan.	2045	4	...	aghmnt
7p. Limousine.	2145	4	...	aghmnt

<sup>a</sup>—Italic figures denote shipping weight.

**A**—Wood wheels with spare.

a—Wood wheels.  
B—Wood wheels.

B—Wire wheels with spare.  
L—Wire wheels.

b—Wire wheels.  
C—Optional wh.

C—Optional wheels with spare.

- c—Type of wheels optional.
- D—Disk wheels with spare.
- d—Disk wheels.
- e—Front and rear bumpers.
- f—Front bumper.
- g—Shock absorbers or snubbe
- h—Automatic windshield wip

#### KEY TO SYMBOLS

**KEY TO SYMBOLS**

i—Trunk and trunk rack.  
 j—Trunk rack, no trunk.  
 k—Spare tire.  
 l—Spare tire lock.  
 m—Engine heat indicator.  
 n—Dash gasoline gage.

- Car heater.
- p — Cigar lighter.
- r — Rear traffic signal.
- s — Spotlight.
- t — Vanity and smoking.
- u — Smoking set.

- Vanity set.
- Windshield wings.
- Clock.
- Overall length.
- Prices on application.

## Prices, Weights and Equipment of Current Passenger Car Models

Passengers and Model	F.O.B. Price	Doors	Net Weight*	Standard Equipment	Passengers and Model	F.O.B. Price	Doors	Net Weight*	Standard Equipment	Passengers and Model	F.O.B. Price	Doors	Net Weight*	Standard Equipment	Passengers and Model	F.O.B. Price	Doors	Net Weight*	Standard Equipment
4-5p. Vic. Bro'm. \$2760	3550	aghiklnprx			5p. Sedan. \$1395	4	3040	aghnr		5p. Sp. Phaeton. \$2075	4	4170	Beghjkmnp		"TV6"				
5p. Sedan. 2790	3580	aghiklnprx			2p. Cabriolet. 1435	2	2820			2p. Roadster. \$5800	2	4300	aghlmprx		2p. Roadster. \$5800	2	4300	aghlmprx	
5p. Ox. Sedan. 2790	3580	aghiklnprx			2-4p. Cabriolet. 1475	2	2965	aghnr		5p. Spt. Tour. 5600	4	4700	aghlmprx		2-4p. Roadster. 5600	2	4700	aghlmprx	
5p. Sp. Sedan. 2910	3630	aghiklnprx			"Century 125-8"					7p. Touring. 5700	4	4700	aghlmprx		5p. Spt. Tour. 5600	4	4700	aghlmprx	
3-5p. Con. vt Cpe. 2850	3510	aghiklnprx			5p. Touring. 1795	4	3300	aghnvx		5p. Family Sedan. 2350	2	3965	aghlmprx		7p. Sedan. 6720	4	5200	aghlmprx	
128" W.B. 2-4p. Sp. Runab't. 2975	3440	aghiklnprx			7p. Touring. 1895	4	3360	aghnvx		2-4p. Conv. Cpe. 2450	2	3965	aghlmprx		5p. Sedan. 6720	4	5200	aghlmprx	
5p. Sp. Touring. 2975	3630	aghiklnprx			2-4p. Roadster. 1895	2	3355	aghnvx		4p. Victoria. 2550	2	3985	aghlmprvx		5p. Sedan. 6920	4	5200	aghlmprx	
7p. Touring. 3060	3620	aghiklnprx			5p. Town Sedan. 2195	2	3465	aghnvx		5p. Town Sedan. 2495	4	4065	aghlmprx		7p. Sedan. 6920	4	5200	aghlmprx	
7p. Sedan. 2980	3790	aghiklnprx			5p. Sedan. 2195	4	3545	aghnvx		5p. Trans. Cab. 4500	4	4090	aghlmprtx		7p. Town Car. 9000	4	5200	aghlmprx	
7p. Ox. Sedan. 2980	3790	aghiklnprx			7p. Sedan. 2345	4	3360	aghnvx		7p. Sedan. 134" W.B. 2520	4	3360	aghnvx						
7p. Limousine. 3080	3870	aghiklnprx			"Century 8"					7p. Family Sedan. 2575	4	4345	aghlmprtx						
<b>GARDNER</b>					5p. Phaeton. 1905	3285				5p. Cab. Sedan. 2625			aghlmprtx		<b>MARMON</b>				
"75 Std."					5p. Cab. Sedan. 1915	3335				5p. Cab. Sedan. 2675			aghlmprtx		"68"				
4p. Roadster. \$1195	22995	ahmnr			5p. Phaeton. 1935	3355				5p. Vic. Cope. 1520			ahmnr		2-4p. Roadster. \$1565	2	2700	ahmnrw	
5p. Sp. Coupe. 1295	23290	ahfjmn			5p. Sedan. 1825	2385				5p. Vic. Cope. 1465			ahmnr		5p. Sedan. 1465	2	2897	ahmnr	
4p. Vic. Cope. 1295	23290	ahfjmn			4p. Coupe. 1865	3375				2-4p. Coupe. 1465			ahmnr						
5p. Club Sedan. 1390	43265	ahmnr			5p. Sedan. 1875	4345													
5p. Std. Sedan. 1495	43330	ahmnr			2-4p. Cabriolet. 1955	3345													
"75 Del."																			
4p. Roadster. 1295	22995	ahgmn																	
5p. Sp. Coupe. 1395	23290	ahgjmn																	
4p. Vic. Cope. 1395	23290	ahgjmn																	
5p. Club Sedan. 1490	43265	ahgmn																	
5p. DeL. Sedan. 1595	43400	ahgmn																	
"85"																			
4p. Roadster. 1695	23040	ahgmn																	
5p. Brougham. 1875	43360	ahgjmn																	
5p. Sedan. 1895	43380	ahgjmn																	
...Cus. Coupe. 2095	3350	ahgmn																	
"95"																			
2-4p. Roadster. 2095	3440	ahghmnprx																	
2-4p. Collap. Cpe. 2495	3625	ahghmnprx																	
5p. Brougham. 2275	43750	ahghmnprx																	
5p. Sedan. 2295	43790	ahghmnprx																	
<b>GRAHAM-PAIGE</b>																			
"610"																			
2p. Coupe. \$860	22625	aghmn																	
5p. Sedan. 875	42825	aghmn																	
"614"																			
4p. Coupe. 1275	23334	aghmn																	
5p. Sedan. 1295	43450	aghmn																	
"619"																			
4p. Coupe. 1575	23825	aghmnrtx																	
5p. Sedan. 1595	43950	aghmnrtx																	
"629"																			
5p. Sedan. 1985	44250	Deghjlmnp																	
5p. Town Sedan. 2085	44150	Deghjlmnp																	
7p. Sedan. 2110	44375	Deghjlmnp																	
2-4p. Cabriolet. 2185	24140	e																	
2-4p. Coupe. 2185	2	e																	
"835"																			
5p. Sedan. 2285	44425	Deghjlmnp																	
5p. Town Sedan. 2385	44325	Deghjlmnp																	
7p. Sedan. 2410	44550	Deghjlmnp																	
2-4p. Cabriolet. 2485	24270	Deghjlmnp																	
2-4p. Coupe. 2485	2	Deghjlmnp																	
<b>HUDSON</b>																			
118" W.B. 2-4p. Roadster. \$1295	23355	ahmnr																	
2-4p. Coupe. 1295	23525	ahmnr																	
5p. Coach. 1250	23575	ahmnr																	
5p. Sedan. 1325	43645	ahmnr																	
127" W.B. 7p. Phaeton. 1650	43630	ahmnr																	
7p. Touring. 2285	43630	ahmnr																	
5p. Bro'm. Sedan. 2595	43755	ahmnr																	
7p. Sedan. 2795	43975	ahmnr																	
"White Eagle"																			
132" W.B. 4p. Del. Spdstr. 3275	4020	beghx																	
4p. Coupe. 3185	4100	beghx																	
5p. Del. Victoria. 3185	4100	beghx																	
139" W.B. 4p. Del. Tourster. 3275	4000	beghx																	
5p. Del. Bro'm. 3275	4360	beghx																	
7p. Del. Sedan. 3785	4400	beghvx																	
7p. Ber. Sed. DeL. 3885	4350	beghvx																	
<b>HUPMOBILE</b>																			
"Century 6"																			
5p. Phaeton. \$1425	2900	aghnr																	
2-4p. Sportster. 1435	2820	aghnr																	
7p. Phaeton. 1455	42955	aghnr																	
5p. Sedan, 2d. 1345	28975	aghnr																	
4p. Coupe. 1385	2965	aghnr																	
<b>HUPMOBILE</b>																			
"Century 6"																			
5p. Phaeton. \$1425	2900	aghnr																	
2-4p. Sportster. 1435	2820	aghnr																	
7p. Phaeton. 1455	42955	aghnr																	
5p. Sedan, 2d. 1345	28975	aghnr																	
4p. Coupe. 1385	2965	aghnr																	
<b>LA SALLE</b>				</td															

## Prices, Weights and Equipment of Current Passenger Car Models

Passengers and Model	F.O.B. Price	Doors	Net Weight*	Standard Equipment	Passengers and Model	F.O.B. Price	Doors	Net Weight*	Standard Equipment	Passengers and Model	F.O.B. Price	Doors	Net Weight*	Standard Equipment	Passengers and Model	F.O.B. Price	Doors	Net Weight*	Standard Equipment
4p. Sp. Rstdster..	\$1075	2	2730	ceghjn	"8-69"					"8-88"					131" W.B.				
2-4p. Cabriolet..	1155	2	2825	aghjn	126" W.B.					5p. Tourer..	\$2495	4	3650	eg	7p. State Tour..	\$2485	4	4125	Bghjklmnrpx
5p. 2d. Sedan..	1045	2	2890	aghnu	5p. Coupe..	\$2345	..	3905	Deghlmnrxt	2-4p. Roadster..	2750	2	3540	eg	7p. Sedan..	2085	4	4120	aghjklmnrpx
3p. Land. Coupe..	1045	2	2895	aghnu	133 1/2" W.B.					2p. Speedster..	2985	2	2875		4p. Cabriolet..	2250	2	4030	Beghjklmnrpx
5p. 4d. Sedan..	1145	4	2980	aghnu	2-4p. Roadster..	2245	2	3710	Deghlmnrwx	5p. Sedan..	2985	4	3880	eg	5p. State Sedan..	2250	4	4260	Bghjklmnrpx
5p. Land. Sedan..	1265	4	3050	aghnu	7p. Sedan..	2545	4	3975	Deghlmnrxt	7p. Sedan..	3285	4	3980	eg	7p. State Sedan..	2350	4	4310	Bghjklmnrpx
<b>OLDSMOBILE</b> "F-28"					7p. Limousine..	2645	4	4200	Deghlmnrxt	<b>ROLLS ROYCE</b> "Si. Ghost"					7p. Limousine..	2450	4	4395	Bghjklmnrpx
.. Sp. Roadster..	\$995	..	2650	ceghmnr	<b>PIERCE-ARROW</b> "81"					Open Models..					<b>STUTZ</b> "BB" "Custom"				
5p. Sp. Touring..	995	..	2640	ceghmnr	2p. Runabout..	\$2600	2	3350	afghlmnrxt	Closed Models..					131" W.B.				
2p. Coupe..	925	..	2650	aghmnr	4p. Touring..	2700	4	3365	afghlmnrxt	"New Phan"					4p. Speedster..	\$3495	2	4478	aefgilmnprx
5p. Sedan, 2d..	925	2	2785	aghmnr	5p. Sedan..	2850	4	3500	afghlmnrxt	Closed Models..					4p. Speedster..	3595	4	4509	aefgilmnprx
2-4p. Sp. Coupe..	995	..	2680	ceghmnr	5p. Club Bro'm..	2475	2	3540	afghlmnrpx	<b>STEARNS-KNIGHT</b> "6"					2p. Speedster..	4895	2	4302	beghjlmnrpx
5p. Sedan, 4d..	1025	4	2860	aghmnr	2p. Coupe metal..	2650	2	3460	afghlmnrpx	126" W.B.					4p. Black Hawk..	4945	2	4625	beghjlmnrpx
5p. Landau Sed..	1085	..	2855	ceghmnr	5p. Brougham..	3250	2	3540	afghlmnrpx	2-4. Cab. Rdstr..	\$2495	..			2p. Coupe..	3495	2	4649	aefgilmnprx
<b>OVERLAND</b> "4" "Whippet"					2p. Coupe leath..	2650	2	3490	afghlmnrpx	134" W.B.					5p. Coupe..	3545	2	4769	aefgilmnprx
5p. Touring..	\$455	4	1985	agr	2p. Club Sedan..	2750	4	3635	afghlmnrpx	5p. Sedan..	2495	..			5p. Sedan..	3570	4	4977	aefgilmnprx
2-4p. Roadster..	525	2	1932	agr	2-4p. Coupe met..	2750	2	3530	afghlmnrpx	7p. Limousine..	2845	..			2p. Cab. Coupe..	3695	2	4520	aefgilmnprx
2p. Coupe..	535	2	2060	agh	5p. Sedan..	2750	4	3605	afghlmnrpx	"F-6-85"					145" W.B.				
2-4p. Coupe Cab..	595	2	2122	agh	2p. Con't Cpe..	2850	4	3455	afghlmnrpt	4p. Touring..	3250	4	4322	aeighjklmnr	7p. Speedster..	3895	4	4748	aefgilmnprx
5p. Coach..	535	2	2160	agh	5p. Club Land..	3250	4	3640	afghlmnrpt	7p. Sedan..	2845	..			7p. Sedan..	3895	4	5018	aefgilmnprx
5p. Sedan..	610	4	2210	agh	7p. Sedan..	3250	4	3700	afghlmnrpt	7p. Limousine..	2945	..			7p. Sedan..	3995	4	5159	aefgilmnprx
<b>"6" Whippet</b>					5p. Opera Bro'm..	7000	..			4p. Roadster..	\$3250	2	4252	aeighjklmnr	5p. Collap. Lim..	4095	..	5030	
2-4p. Roadster..	685	2	2228	agr	"36"					4p. Touring..	3250	4	4322	aeighjklmnr	7p. Collap. Lim..	4195	..		
5p. Touring..	615	4	2240	agr	2p. Runabout..	5875	2	4560	afghlrlx	4p. Cab. Rdstr..	3550	2	4500	aeighjklmnrpx	<b>"Weyman-Cus."</b> 131" W.B.				
2-4p. Coupe..	695	2	2356	agh	4p. Touring..	5875	4	4510	afghlrlx	5p. C.C. Sedan..	2495	..			2p. Black Hawk..	4895	2	4302	beghjlmnrpx
5p. Cosh..	695	2	2423	agh	7p. Sedan..	5875	4	4595	afghlrlx	5p. Std. Sedan..	2495	..			5p. Sedan..	4120	4	4393	aeghjlmnrpx
5p. Sedan..	770	4	2484	agh	5p. Lim. End..	5875	4	4815	afghlrlx	5p. Sedan Lim..	3700	4	4647	aeighjklmno	4p. Sedan..	4120	2		aeghjlmnrpx
<b>PACKARD</b> "52"					4p. Cpe. Sedan..	6375	2	4795	afghlrlx	5p. Cus. Sed. Lim..	3700	4	4637	aeighjklmno	5p. Sedan..	4120	4		aeghjlmnrpx
4p. Runabout..	\$1975	2	3620	..	4p. Sedan..	6375	4	4830	afghlrlx	7p. Sedan..	3750	4	4702	aeighjklmno	5p. Landau Sed..	4420	4		aeghjlmnrpx
5p. Phaeton..	1975	4	3665	Deghlmnrpx	4p. Ene. Dr. Cpe..	2950	2	3525	afghlrlpt	4p. Ene. Dr. Lim..	2950	4	3755	afghlmnrpt	5p. Sedan..	4495	4		aeghjlmnrpx
5p. Sedan..	1985	4	4000	Deghlmnrpx	7p. Sedan..	3550	4	3605	afghlmnrpt	5p. Sedan..	3700	4	4647	aeighjklmno	5p. Sedan..	4545	4		aeghjlmnrpx
4p. 4d. Coupe..	2050	2	3950	Deghlmnrpx	4p. Lim. End..	6375	2	4760	afghlrlx	7p. Limousine..	3700	4	4647	aeighjklmno	7p. Sedan..	4745	4		aeghjlmnrpx
4p. Conv't Cpe..	2125	2	3875	"53"	5p. C. C. Sedan..	6375	4	4795	afghlrlx	5p. C. Sedan..	6475	4	4805	afghlrlx	7p. Limousine..	4995	4	4778	aeghjlmnrpx
5p. Phaeton..	2085	4	3745	..	2p. Coupe..	6600	2	4745	afghlrlx	7p. Sedan..	3750	4	4702	aeighjklmno	7p. Landau Lim..	5295	4		aeghjlmnrpx
4p. Runabout..	2085	2	3700	..	4p. Sedan..	6600	4	4795	afghlrlx	4p. Ene. Dr. Land..	6000	4	4895	afghlrlx	<b>"Salon Cus."</b> "Salon Cus."				
7p. Touring..	2185	4	3865	Deghlmnrpx	4p. Sedan..	6600	4	4830	afghlrlx	7p. Sedan..	6000	4	4840	afghlrlx	5p. PW Sedan..	6345	4		aeghjlmnrpx
4p. Coupe..	2385	2	4000	deghnt	4p. Ene. Dr. Land..	6000	4	4895	afghlrlx	7p. PW Sedan..	6345	4			7p. PW Sedan..	6345	4	5014	aeghjlmnrpx
5p. Club Sedan..	2385	4	4085	Deghlmnrpx	7p. Sedan..	6000	4	4840	afghlrlx	7p. Con. T'n Car..	6895	4	5044	aeighjlmnrpx					
5p. Sedan..	2385	4	4145	Deghlmnrpx	4p. Lim. End..	6375	4	4840	afghlrlx	<b>PLYMOUTH</b>									
7p. Sedan Lim..	2485	4	4205	Deghlmnrpx	5p. Sedan..	6375	4	4865	afghlrlx	2-4p. Roadster..	\$675	4	2160	ah	<b>VELIE</b> "Std. 50"				
"443"					5p. Sedan..	6600	4	4865	afghlrlx	5p. Touring..	675	2	2270	ahn	5p. Touring..	\$995	2	2252	sehmnrr
4p. Runabout..	3875	2	4350	Djk	5p. Sedan..	6600	4	4865	afghlrlx	5p. Sedan..	695	4	2255	ah	5p. Sedan..	1115	2	3020	sehmnrr
5p. Phaeton..	3875	4	4370	Djk	2p. Coupe..	685	2	2295	ab	5p. Limousine..	685	4	2517	afghlmnrpx	5p. Coupe..	1165	2	2953	sehkmnr
7p. Touring..	3975	4	4410	Deghjklmnp	5p. Club Sedan..	700	2	2435	ah	7p. Limousine..	6800	4	2517	afghlmnrpx	5p. Sedan..	1165	4	3076	sehkmnr
2p. Coupe..	4150	2			2p. Conv't Cpe..	705	2	2435	ah	7p. Town Cab..	6800	4	2517	afghlmnrpx	5p. Sedan..	1195	2	3090	aeghkmnr
2p. Conv't Cpe..	4250	2			5p. Sedan..	705	2	2435	ah	7p. Club Bro'm..	6800	4	2520	afghlmnrpx	5p. Sedan..	1265	4	3100	aeghkmnr
4p. Coupe..	4450	2	4635	Djk	5p. Sedan..	705	2	2435	ah	7p. Limousine..	6800	4	2520	afghlmnrpx	2-4p. Metro Sed..	1265	2	2980	seghkmnr
5p. Club Sedan..	4450	4	4710	Deghjklmnp	2p. DeL. Coupe..	735	2	2435	ah	4p. Sedan..	5500	2	4942	afghlmnrpx	5p. Sedan..	1265	2	2980	seghkmnr
7p. Sedan..	4450	4	4820	Deghjklmnp	5p. Sedan..	735	4	2460	ah	5p. Sedan..	5500	4	5102	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
7p. Sedan Lim..	4550	4	4860	Deghjklmnp	5p. Sedan..	735	4	2460	ah	5p. Limousine..	5500	4	5102	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
"Std. 8"					5p. Sedan..	735	4	2460	ah	5p. Sedan..	5500	4	5000	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
7p. Touring..	3550	4			5p. Sp. Phaeton..	775	4	2435	ah	5p. Sedan Lim..	5500	4	5000	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
5p. Phaeton..	3650	4			5p. Sp. Phaeton..	775	4	2435	ah	7p. Sedan..	5500	4	5027	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
2p. Coupe..	3550	2			5p. Sp. Phaeton..	775	4	2435	ah	5p. Sedan..	5500	4	5102	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
4p. Conv't Cpe..	3650	2			5p. Sp. Phaeton..	775	4	2435	ah	5p. Limousine..	5500	4	5102	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
4p. Coupe..	3750	2			5p. Sp. Phaeton..	775	4	2435	ah	5p. Sedan..	5500	4	5102	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
5p. Club Sedan..	3750	4			5p. Sp. Phaeton..	775	4	2435	ah	5p. Sedan..	5500	4	5102	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
7p. Sedan..	3750	4			5p. Sp. Phaeton..	775	4	2435	ah	5p. Sedan..	5500	4	5102	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
7p. Sedan Lim..	3850	4			5p. Sp. Phaeton..	775	4	2435	ah	5p. Sedan..	5500	4	5102	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
"6-60"					5p. Sp. Phaeton..	775	4	2435	ah	5p. Sedan..	5500	4	5102	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
2-4p. Roadster..	\$1195	2	2635	Deghlmnrw	5p. Sp. Phaeton..	775	4	2435	ah	5p. Sedan..	5500	4	5102	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
5p. Phaeton..	1195	4	2635	Deghlmnrw	5p. Sp. Phaeton..	775	4	2435	ah	5p. Sedan..	5500	4	5102	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
2-4p. Coupe..	1295	4	2775	Deghlmnr	5p. Sp. Phaeton..	775	4	2435	ah	5p. Sedan..	5500	4	5102	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
5p. Brougham..	1195	4	2850	Deghlmnr	5p. Sp. Phaeton..	775	4	2435	ah	5p. Sedan..	5500	4	5102	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
5p. Sedan..	1195	2	2870	Deghlmnr	5p. Sp. Phaeton..	775	4	2435	ah	5p. Sedan..	5500	4	5102	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
5p. Sedan..	1295	4	2905	Deghlmnr	5p. Sp. Phaeton..	775	4	2435	ah	5p. Sedan..	5500	4	5102	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
"6-80"					5p. Sp. Phaeton..	775	4	2435	ah	5p. Sedan..	5500	4	5102	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
5p. Phaeton..	1295	4	2975	Deghlmnrw	5p. Sp. Phaeton..	775	4	2435	ah	5p. Sedan..	5500	4	5102	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
2-4p. Roadster..	1295	2	2975	Deghlmnrw	5p. Sp. Phaeton..	775	4	2435	ah	5p. Sedan..	5500	4	5102	aeighjklmno	5p. Sedan..	1265	4	3110	aeghkmnr
5p. Sedan..																			

#### KEY TO SYMBOLS

- \*—Italic figures denote shipping weight.
- A—Wood wheels with spare.
- a—Wood wheels.
- B—Wire wheels with spare.
- b—Wire wheels.
- C—Optional wheels with spare.

- Type of wheels optional.
- Disk wheels with spare.
- Disk wheels.
- Front and rear bumpers.
- Front bumper.
- Shock absorbers or snubbers.
- Automatic windshield wiper.

- Trunk and trunk rack;
- Trunk rack, no trunk.
- Spare tire.
- Spare tire lock.
- Engine heat indicator.
- Dash gasoline gage.

- Car heater.
- Cigar lighter.
- Rear traffic signal.
- Spotlight.
- Vanity and smoking set.
- Smoking set

—Vanity set.  
 w—Windshield wings.  
 x—Clock.  
 ‡—Overall length.  
 §—Prices on application.

## Mechanical Specifications of Current Passenger Car Models

*This list comprises current cars distributed on a national basis only. Data for previous models back to 1920 will be found in the Chilton Catalog and Directory.*

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## KEY OF SYMBOLS

†—Overall length

—Others Used  
\*—At extra cost  
#—On Royal models

On royal models 0  
—Semi-floating  
—Three-quarter float

**A**—Aluminum  
**Al**—Aluminum with s  
**B**—Semi-steel  
**D**—Ductile  
**E**—Elastic

B-F—Internal front and external rear

Every  
Light Truck  
Needs the

TRAINOR  
**OVERLOAD**  
SPRING



If Your Jobber or Spring  
Service Station Cannot  
Supply You, Write Direct

HERE is an auxiliary spring that does its work at the point where the regular spring leaves off. Under a normal load it does not come into play, but with excess tonnage, or one-sided loads, it instantly relieves the regular spring and the overload.

**No Broken Springs**

This safeguard reduces the broken spring danger, for it eliminates the strain. And it eliminates broken axles and frames for the same reason.

**Haul Bigger Load**  
With The Trainor Overload Spring it is perfectly safe to haul an additional ton—often making one load take the place of two. This makes for reduced hauling costs and greater profits.

**A Profitable Item**  
Every light truck driver in your community is a prospect for you—and every light truck you sell should be equipped before it leaves your shop. The margin and profit for you is liberal and you also make your installation charges.

Now is the time to go after this profitable business. Hundreds of dealers have found Trainor Overload Springs real money makers and are doing a rapidly increasing business.

*Some of the trucks  
Trainor Overload Springs  
will fit*

**Chevrolet—**

1 ton—Model R, X—1925  
1 ton—Model X, LM, LO,  
LP—1926-27-28

**Graham Bros.—**

1½ ton—1925-26-27  
1½ and 1¾—1928

**Graham G-Boy—**

1 ton and 1¼—1926-27-28

**Federal Knight—**

1 ton—1926-27-28  
1½ ton—S 25—1925-26-27  
1½ ton—S 23—1926-27-28

**G. M. C.—**

1 ton—Model T 20—1927-  
28  
1½ ton—Model T 20C—  
1927-28  
2 ton—Model T 40-50—  
1927-28  
1 ton—Model T 19—1928  
1½ ton—Model T 21—  
1927-28

**TRAINOR NATIONAL SPRING CO.** Newcastle, Ind.

## Mechanical Specifications of Current Passenger Car Models—Continued

Exactly  
tests w  
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depres  
platfor  
shop!

1

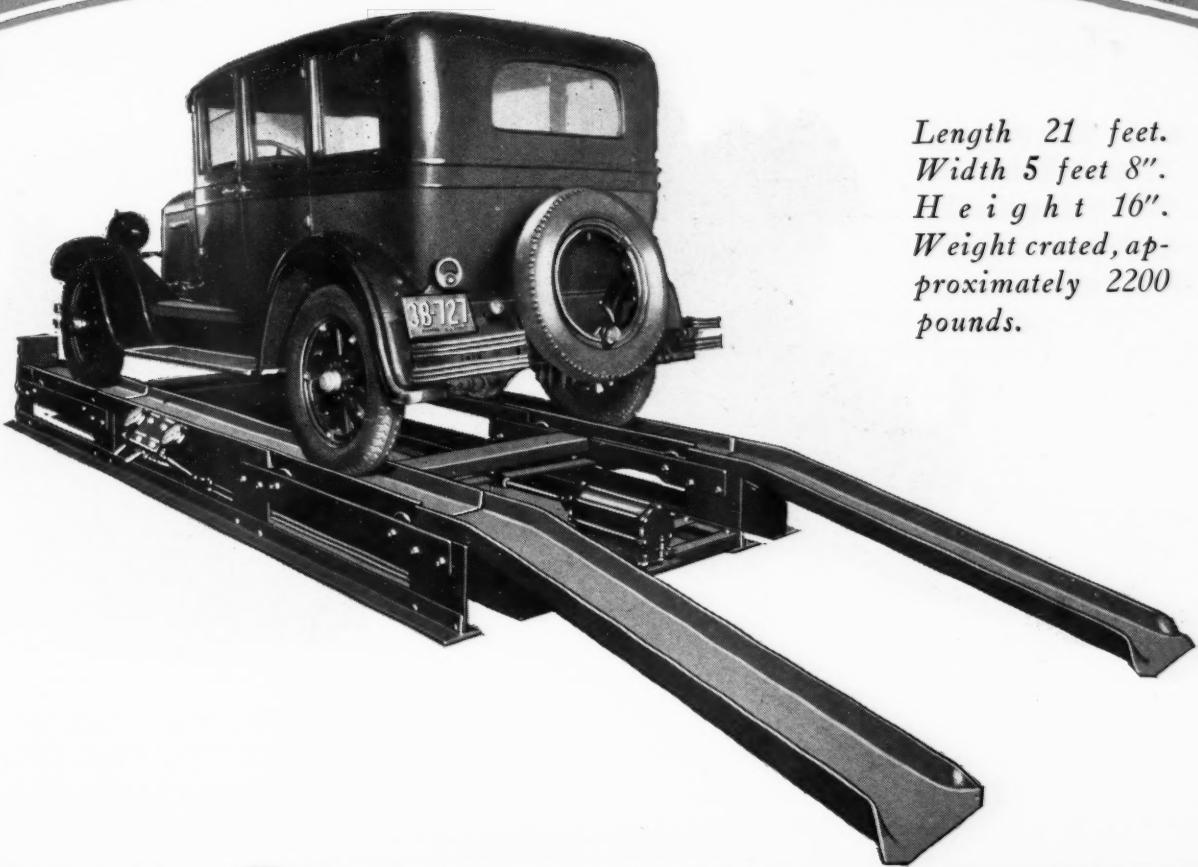
111

111

10

8

E



Length 21 feet.  
Width 5 feet 8".  
Height 16".  
Weight crated, approximately 2200 pounds.

# Raybestos

## BRAKE TESTER \$500

MANUFACTURED  
UNDER KRAFT  
PATENT NO. -  
1601739

Exactly reproduces road conditions represented by sliding platforms. Accurate tests whether tires are wet or dry. All essential parts visible. Operated from one position. Requires no pit. Car is driven up ramps onto platforms without slowing down to ride over rolls. "Electric lights tell the story at a glance." Operated from left side, close to pedal depressor. 3 checks—pressure gauge, indicator lights, moving platforms. Get this accurate, efficient tester for your shop!

SEND THIS COUPON

THE RAYBESTOS CO., Bridgeport, Conn.  
Gentlemen:—Send me details on Brake Tester and complete brake service  
equipment proposition.

M A 8/10/38

Firm name .....  
Street .....  
City .....  
Jobber's name .....

# Everything Necessary for the Brake Service Station

\$1375

## Departmentalize Your Business

Here is everything necessary, including 500 feet of Genuine Silver Edge Raybestos Brake Lining in assorted sizes. You also obtain Raybestos merchandising and sales helps: the benefit of our national advertising campaigns and association with the outstanding leaders of the brake lining industry. And all for \$1375.

Raybestos Brake Tester, \$500.

Raybestos Drum Lathe. Trues inside or outside of drum without removing drum from wheel or removing or deflating tires. \$525 for passenger cars. (Truck attachments \$110.00 additional.)

Raybestos No. 4 Combination drilling

and countersinking machine, riveter, rack for rivets, stock of rivets, \$90. Raybestos C & G Super Wheel Puller with complete set of 24 Adapters, \$60.

500 feet of Silver Edge Raybestos. Merchandising helps which sell your brake service to owners.

Any of these equipment items may be purchased separately, if desired.

An unusual opportunity to enter the profitable brake service field. Write for complete information or ask your jobber.

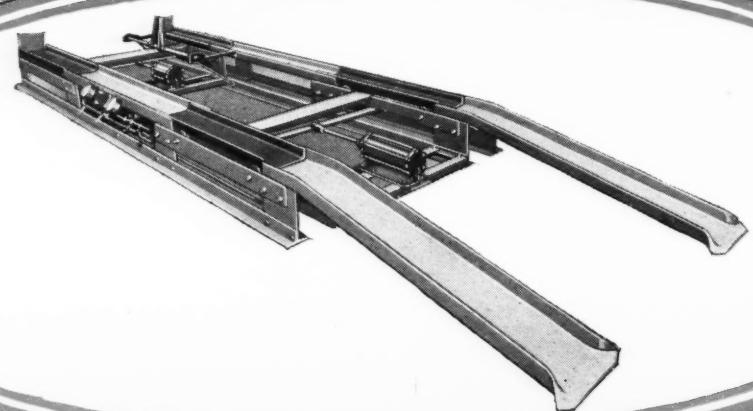
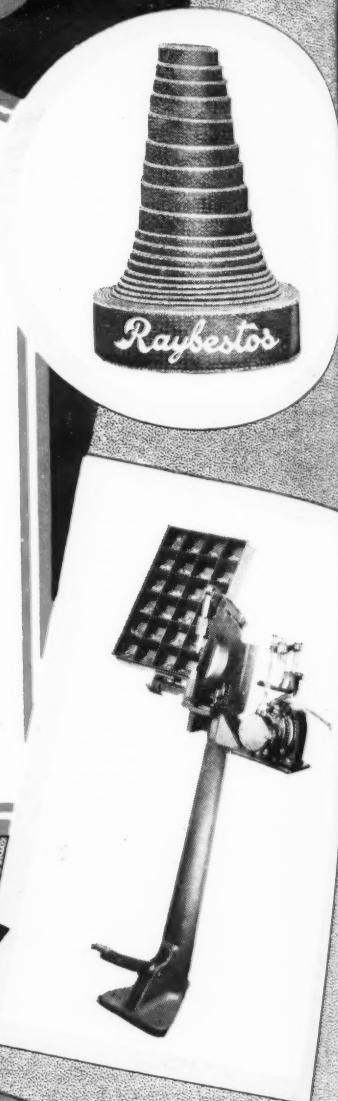
THE RAYBESTOS COMPANY, BRIDGEPORT, CONN.

The Canadian Raybestos Co., Ltd., Peterborough, Ont.

Raybestos-Belaco, Ltd., London, England



*Raybestos*





*during the first Six months of 1928*

Shattering the world's records which it established during its first 24 months on the market, Pontiac Six has again achieved great new heights in sales. Between January 1st and June 30th of 1928—the greatest six months in Oakland history—136,125 Pontiac Sixes were sold!

Here is a great General Motors Six which, at the end of 30 months before the public, showed a production total of over 350,000 cars. Priced to appeal to the vast market seeking a good dependable low-priced six—designed to provide the complete satisfaction which only a smart-looking, smooth-running, long-lived car can give—backed by all the resources of General Motors—

—this internationally famous car is gaining in popular favor every day. Why not investigate the opportunity to join the ranks of prosperous dealers who sell the Pontiac Six and its distinguished companion car, the Oakland All-American Six? Write Dept. C for complete story of the Double Profit Franchise today!

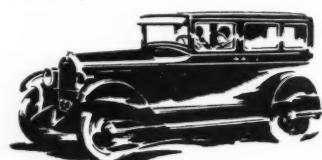
OAKLAND MOTOR CAR COMPANY, PONTIAC, MICHIGAN

**OAKLAND-PONTIAC**  
*Double-Profit*  
Franchise



# STILL BREAKING SALES RECORDS

**GREATEST  
JULY IN  
WILLYS-  
OVERLAND  
HISTORY**



## The impressive forward march of Willys-Overland continues uninterrupted

**F**Ollowing the most successful six-month period in Willys-Overland's 20-year history, with sales exceeding those for the entire year 1927, came July with tremendously increased sales over any previous July. 100% more Whippet and Willys-Knight cars were purchased last month than during July last year.

Latest available registration figures for June, from 38 states, show Willys-Knight and Whippet cars in third place.

This success is not surprising. Whippet Fours and Sixes, and the three great Willys-Knight Sixes (providing the advantages of the *patented* Knight double sleeve-valve engine at the lowest prices in Willys-Knight history) offer a degree of comfort, safety, economy and value never previously available at such extremely low cost.

The sweeping popularity of the Willys-Overland line naturally means increased sales and increased profits for dealers. The gross dollar return on the sale of one each of Whippet Four and Six models is \$1618.60.

Write or wire for franchise particulars.

WILLYS-OVERLAND, INC., TOLEDO, OHIO  
WILLYS-OVERLAND SALES CO., LTD., TORONTO, CANADA

**SIXES** *Whippet FOURS*

**WILLYS • KNIGHT**

*"We recommend the use of  
G. P. A. Radiator Glycerine"—*



**A**LTHOUGH G. P. A. Radiator Glycerine may be new to some dealers it is an old friend to the D. M. S. Motor Repair Co., who write us:

"We recommend the use of G. P. A. Radiator Glycerine because it has a slightly higher boiling point than water and, therefore, will work nicely in a car equipped with an automatic winter front. We also are well sold on it because one installation will protect the properly serviced car all season. Likewise, we appreciate the fact that glycerine is not a solvent of a Duco or lacquer finish and, therefore, there is no possibility that the finish of a car may be injured or destroyed through its use.

"We find that G. P. A. Radiator Glycerine will unfailingly serve its purpose if the car is properly serviced. In some instances we have refused to sell G. P. A. Glycerine to motorists who would not first have bad hose connections replaced and some radiator leaks, already in evidence, attended to. Practically the only complaints that develop are from motorists who have been negligent about properly servicing their cars.

"If you will continue to inform the public in regard to the necessary servicing procedure, we believe there is no question as to the future of Radiator Glycerine."

—“because one  
installation will  
protect the properly  
serviced car all season”

D. M. S. MOTOR REPAIR CO.  
Kansas City, Mo.

**RADIATOR  
Glycerine**  
THE SAFE ANTI-FREEZE



For years glycerine has been known and successfully used as an anti-freeze. Amundsen took it to the North Pole. Its many advantages have been recognized by the U. S. Bureau of Standards. Only the lack of an easily obtainable standard solution adapted for automobiles has limited its general use.

This limitation no longer exists. The universal desire for a better anti-freeze and the recognition given to glycerine led to the formation of the Glycerine Producers' Association to make it

easily available in a form adapted for automotive use. G. P. A. Radiator Glycerine is the modern anti-freeze. A well-known safe product, without mysterious ingredients. Permanent, non-evaporating, it lasts all winter. No unpleasant odor. Safe for the car. Safe for the finish. Safe in every respect.

Now increased production has made it generally available and sales have doubled and trebled. G. P. A. Radiator Glycerine is the anti-freeze of to-day.



GLYCERINE PRODUCERS' ASSOCIATION

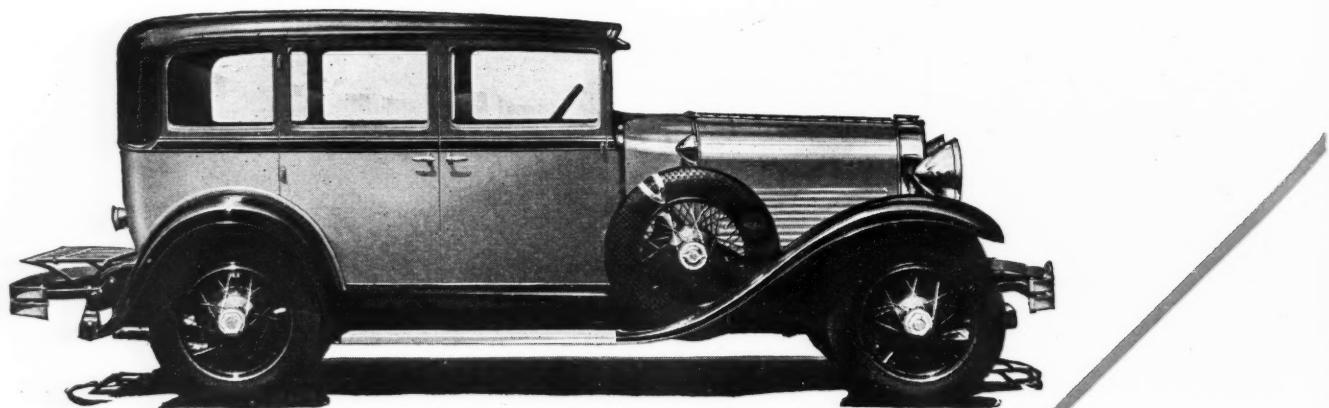
46 East 17th Street, New York City

MARMON

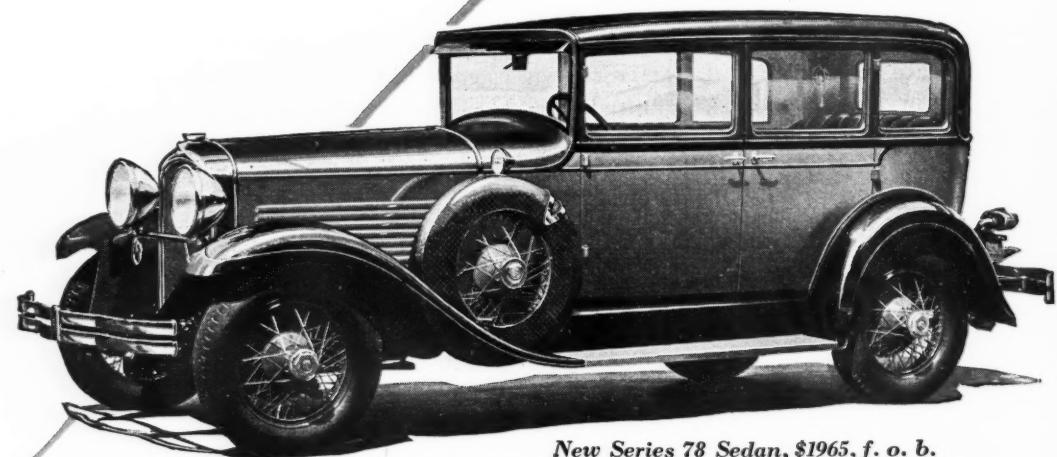


firing in line

N E W

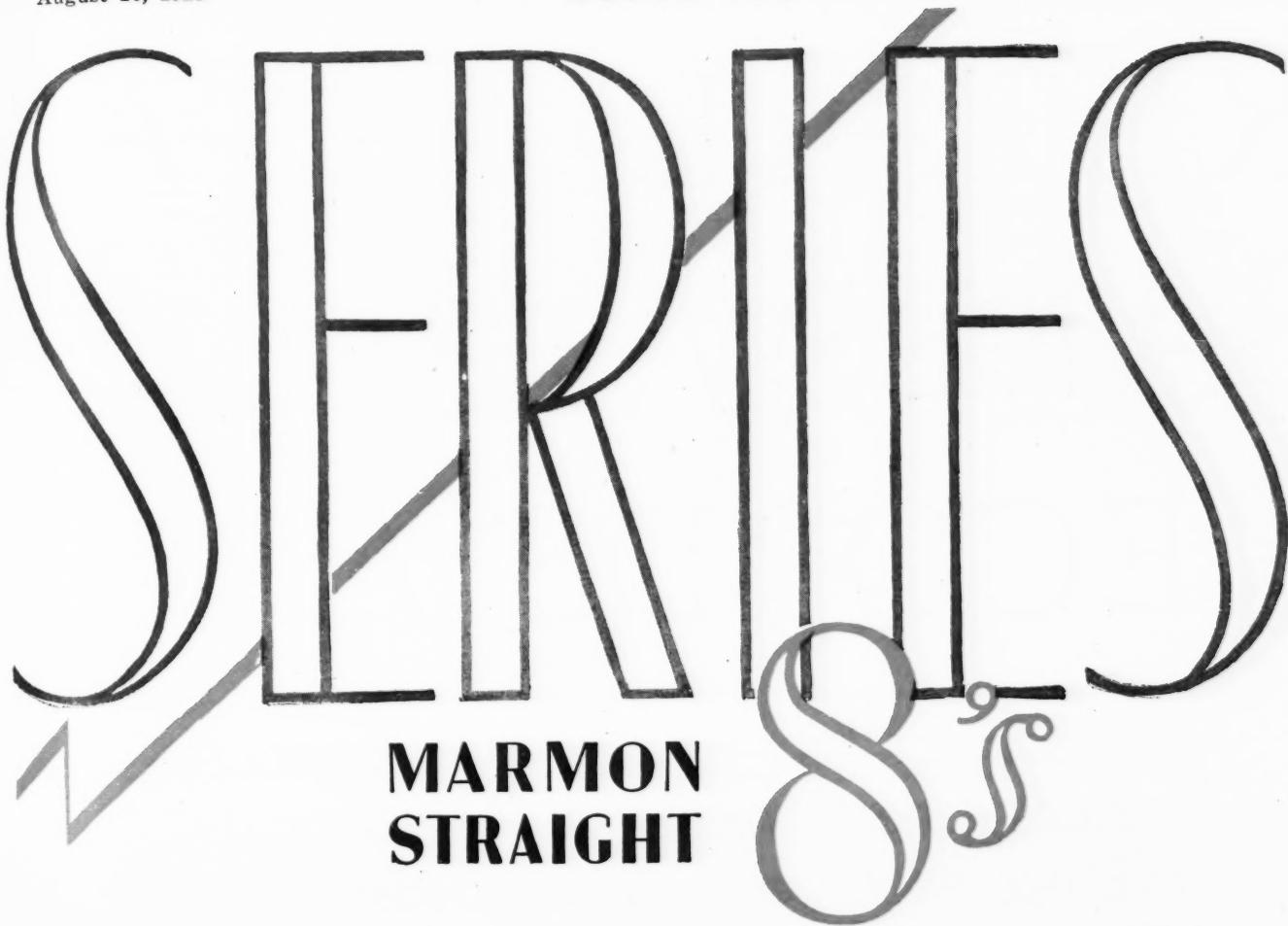


New Series 68 Sedan, \$1465, f. o. b.  
factory. De luxe equipment extra.



New Series 78 Sedan, \$1965, f. o. b.  
factory. De luxe equipment extra.

WORLD'S LARGEST PRODUCERS



# SERIES

**MARMON  
STRAIGHT**

**8's**

THE six months to July 1st found Marmon for this year the equal of its entire 1927 volume. That's progress . . . That's proof that Marmon has struck a responsive note with the public . . . Further, that's evidence that Marmon dealers are in possession of an account that every month is showing increasing volume—increasing profits.

And now, in midsummer, Marmon announces important new developments to its already successful lines . . . Among these developments are:

New, low and even more impressive body lines.

Larger motor in the "68". More power and even smoother operation in both cars.

Double chromium plating of all exposed metal parts—radiator, headlamps, bumpers, etc.

New and more massive front end appearance—new ensemble of lamps and lamp mountings—of radiator, hood and hood hinges.

Every modern fitment and convenience such as the new coincidental lock (located on instrument board) which simultaneously makes fast both ignition and transmission.

Carburetion even further improved, due to recent developments which have a tendency to "super-charge" the gas mixture.

With these and other improvements, Marmon has left nothing undone in producing two lines with every known sales feature and advantage.

Both cars, too, are Straight-Eights—and that means something to every dealer who is closely following Straight-Eight progress. Watch the Straight-Eight come fast this summer and fall.

In the meantime, this new Marmon Series gives you a splendid opportunity to open up a profitable Marmon business now in your territory—if it is open. Details furnished upon request.

MARMON MOTOR CAR COMPANY, INDIANAPOLIS, INDIANA

O F S T R A I G H T - E I G H T S

# RETAIL SALES RECORDS

Again in July—when motor car sales generally slacken—Graham-Paige broke all sales records for any month in 18 years; the last week in July being the greatest week in the company's history. And—for five consecutive months, Graham-Paige has established new all-time sales records.

*Joseph B. Graham  
Robert C. Graham  
Ray Graham*

# GRAHAM

# ATTRACTING SUBSTANTIAL DEALERS

Along with continually increasing sales, there has been a steady and substantial growth in the Graham-Paige dealer organization this year. There are still desirable territories open, and inquiries from dealers who possess the three fundamental qualifications—Character, Capability, and Capital—will receive prompt consideration.

*Joseph B. Graham  
Robert C. Graham  
Ray A. Graham*



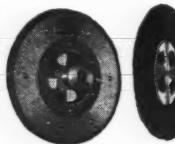
# -PAIGE

# FLEXIBLE SHAFT AND ATTACHMENTS



## Sioux Attachments

Sioux Angle Head gives operator better control of tool in use. In 8 different speeds. Net, each - \$35.00

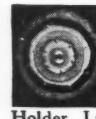


## Sioux Disc Sanders

Sanding discs easily changed. Made in 3 sizes.

No. 814 - 6 inch, with 3 discs, Net, - \$7.50  
 No. 815 - 3 inch, with 3 discs, Net, - \$2.50  
 No. 820 - 8 inch, with 3 discs, Net, - \$10.00  
 Extra discs in different grits at nominal prices.

## Polishing Attachments



No. 842

Sioux  
Lambskin  
Polisher  
with Felt  
Holder. Lambskin bon-  
net removable for clean-  
ing. Net price, - \$5.00



No. 844  
Cotton  
Flannel  
Bonnet

for use with Sioux Felt  
Holder. Net, - \$.25

Patented  
January 15, 1924



No. 1000 with 1-2  
h.p. motor - 1725 R.  
P.M. on 60 cycle. Net  
price - - \$116.50

No. 1005 with high speed 1-2 h.p. motor \$121.50  
3450 R.P.M. on 60 cycle. Net price - -

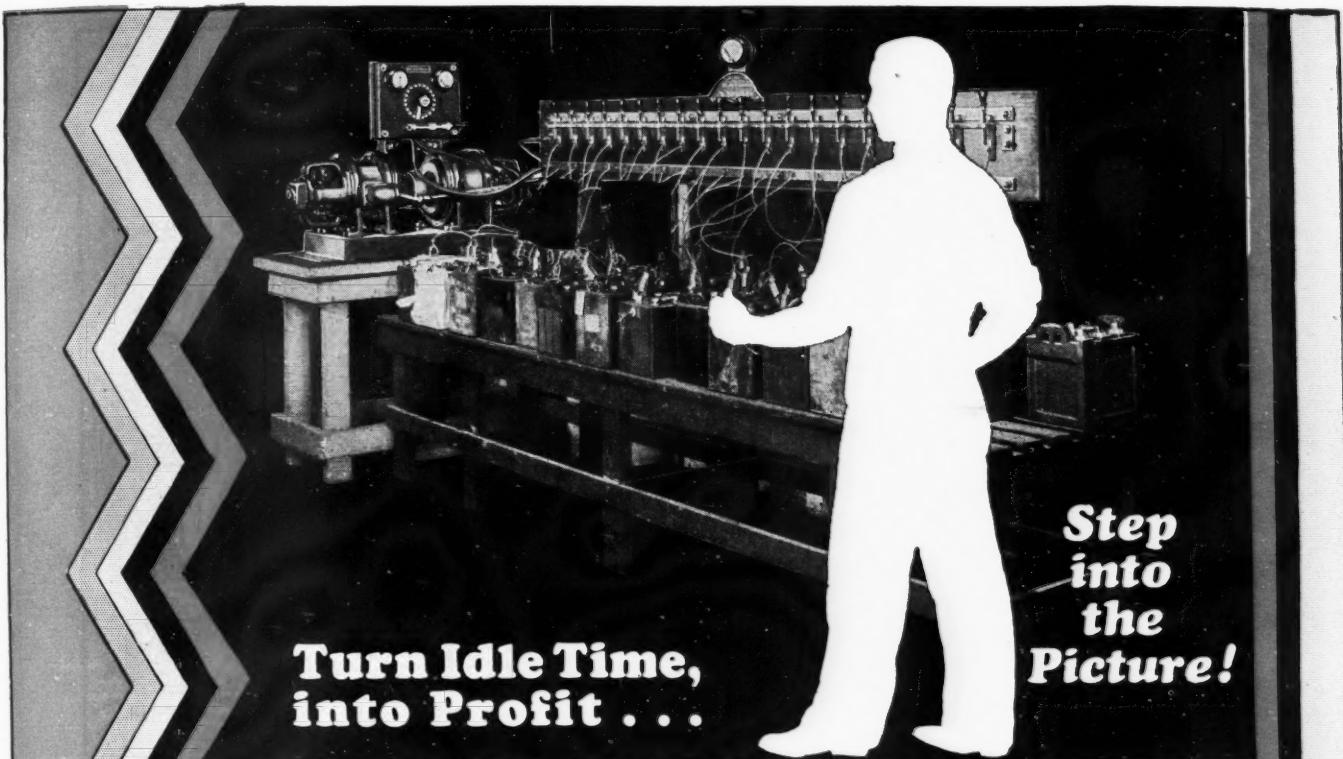
No. 830 "Hi-Boy" for working on buses, \$145.00  
trucks, large cars - with 1-2 h.p. 1725 R.P.M. motor

## This Outfit Puts PROFIT Into Body, Fender and Paint Jobs!

THE SIOUX FLEXIBLE Shaft is a "demon" for work. With the Sioux attachments which are available at nominal cost, it zips through every job of cleaning, smoothing, sanding, and buffing surfaces in preparation for painting, enameling or lacquering—also polishing and simonizing—all so smoothly, so quickly, so thoroughly! Time is money—and the Sioux saves time!

**Your Jobber Sells It**

ALBERTSON & CO.  
Sioux City, Ia., U.S.A.



**Turn Idle Time,  
into Profit ...**

**Step  
into  
the  
Picture!**

**Prepare NOW for BIG  
Battery Season Just Opening**

Battery Service is the answer to OFF-SEASON SLACK because it reaches its peak at the time when all other forms of service are at low-ebb. It TURNS IDLE TIME INTO PROFIT.

Get your order in now for a Weidenhoff Constant Potential "Same Day" Battery Charger. The Battery Business comes into its stride in September and continues heavy through October and November—strong in December and January—and on through the winter months—filling the otherwise dull automotive months with WORTH-WHILE PROFITS.

With Weidenhoff Constant Potential "Same Day" Battery Charger you can charge at least 10 batteries EVERY EIGHT HOURS and you receive an average of \$1.00 for each job. Figure what this means if you wish to operate three shifts of batteries in 24 hours. It is possible to TAKE IN UP TO \$30 PER DAY. This is on the Weidenhoff smallest capacity Constant Potential. There are other capacities up to 60 batteries (in 8 hours), according to shop needs.

**\$19.70 Per Month Pays for It—  
You Can Make More Profit Than This in a Day or Two!**

SEND THE COUPON NOW FOR COMPLETE DETAILS!

**Weidenhoff**  
SHOP EQUIPMENT for  
BATTERY and ELECTRICAL SERVICE  
4358 Roosevelt Road CHICAGO, ILL.

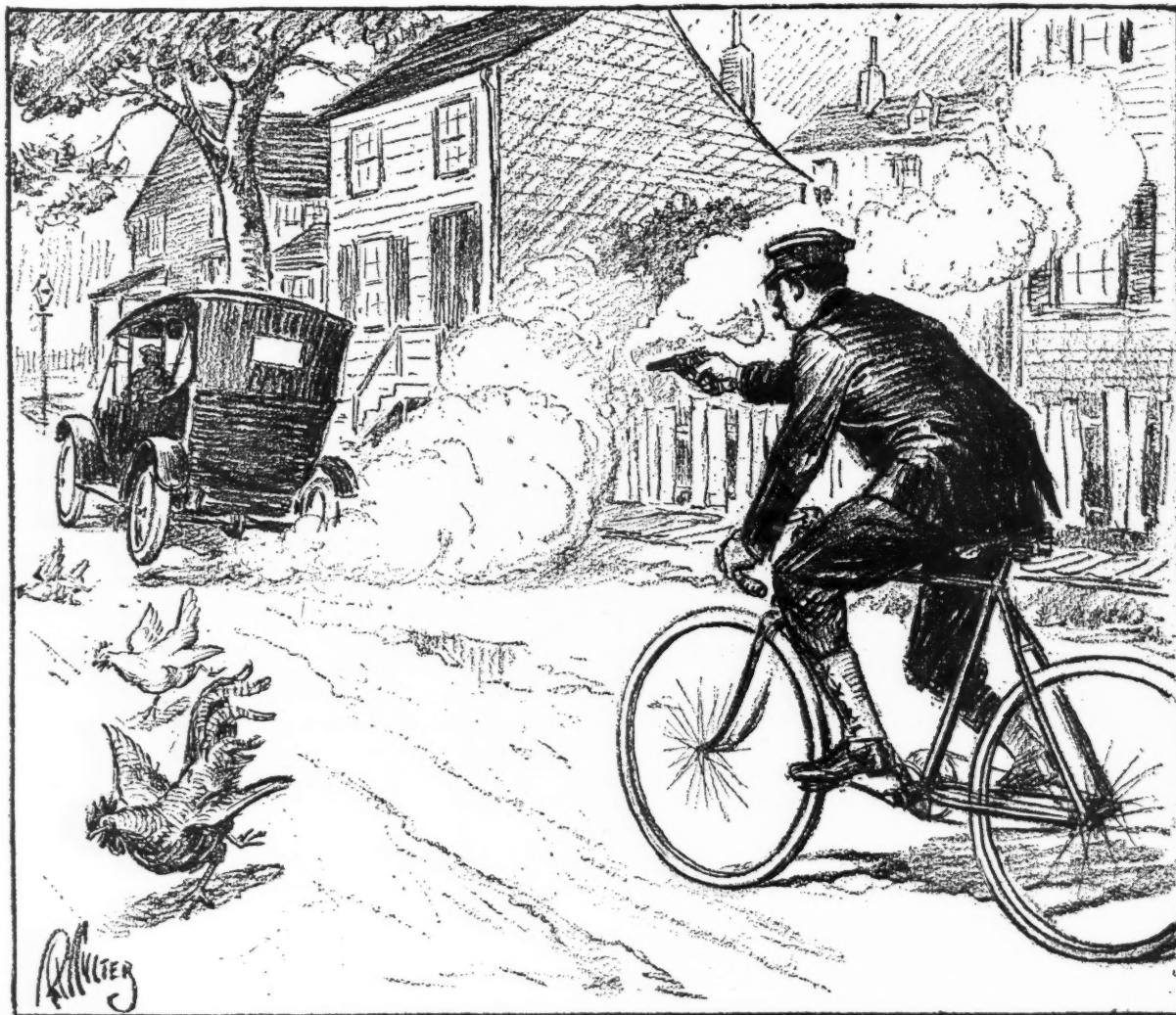
JOS. WEIDENHOFF, INC., 4358 Roosevelt Road, Chicago, Ill.

We are interested in a WEIDENHOFF TEST BENCH. Please send your illustrated booklet showing the various models. It is understood that this inquiry does not obligate me in any way. We are engaged in the business checked below: (Please mention your jobber's name.)

<input type="checkbox"/> Car Dealer	<input type="checkbox"/> Storage Garage	<input type="checkbox"/> General Repair Shop
<input type="checkbox"/> Auto Laundry	<input type="checkbox"/> Tire Shop	<input type="checkbox"/> Radio Shop
<input type="checkbox"/> Electrical Service Station	<input type="checkbox"/> Super-Service Station	<input type="checkbox"/> Battery Shop

Name..... Address.....  
City..... State..... Jobber's name.....

M. A. 8-16-28



In 1906 . . .

PRO BONO PUBLICO, CONSTANT READER AND INDIGNANT TAXPAYER BY THOUSANDS SENT SIZZLING PROTESTS TO THE EDITOR, INDICATING THEIR EXTREME DISPLEASURE OVER THE LATEST FAD OF THE POLICE FORCE. THE BICYCLE SQUAD HAD DISCOVERED THAT A BULLET THROUGH A REAR TIRE WOULD HALT THE LAW-FRACTURING MOTORIST WHO IGNORED VERBAL ORDERS. IT WAS BAD FOR THE TIRES, AND EVEN WORSE WHEN AN ILL-AIMED PELLET CLIPPED OFF AN INCH OR TWO OF WAVING COWLICK . . .

**T**IRES TROUBLES are still with us. But not as often. Nor with the same old provoking aftermath. You can thank Budd-Michelin Wheels for that.

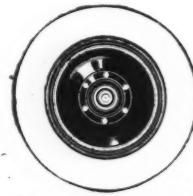
Budd-Michelins radiate away from the casings the friction-heat that wrecks tires in their youth. And they keep the tires true on the wheels because the rim is part of the wheel. There's no wobbling to eat away the mileage.

When a puncture or blow-out stops you, there's a fifth Budd-Michelin ready. To slip off the wheel that has the flat and put on the spare, is a mere four-minute cussless incident.

Budd-Michelin Wheels of cold-rolled steel are *safer* wheels. The impact that would shatter a wooden wheel, can only bend or dent a Budd-Michelin. Then the fifth wheel goes on—and so do you. There's no tow charge to pay—no costly delay—no need to buy a new wheel. The injured Budd-Michelin can be fixed for a trifling charge.

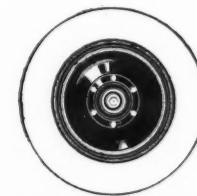
Budd-Michelin stream-line discs blend with modern car design. And dirt shuns their smooth, curving surfaces. They are the easiest of wheels to keep clean.

Which sums up a "sales talk" that swings many a prospect to the car that is Budd-Michelin equipped.



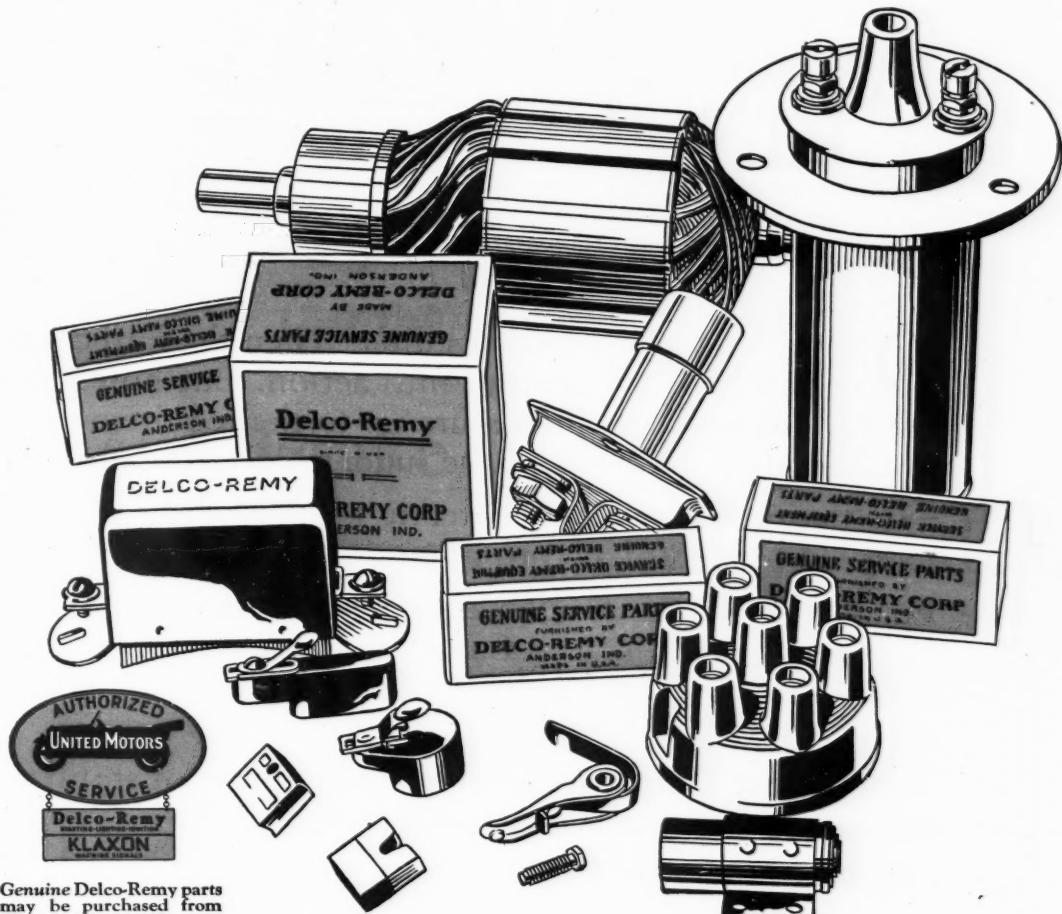
# BUDD

WHEEL COMPANY, DETROIT



*Also makers of the Budd Interchangeable Wire Wheel and Budd Dual Wheel*

# Substitute Parts Invariably Cause Trouble With Other Units In The Electrical System



Genuine Delco-Remy parts may be purchased from Electrical Service Stations who display this sign.

Whenever you hear of a coil that produces a "hotter" spark, or a brush that outlives all others, remember this:

A coil of this "hotter" spark type will soon cause the distributor contact points to burn; and the extreme hardness of the so-called "long-lived" brush will invariably cause excessive wear on the armature commutator.

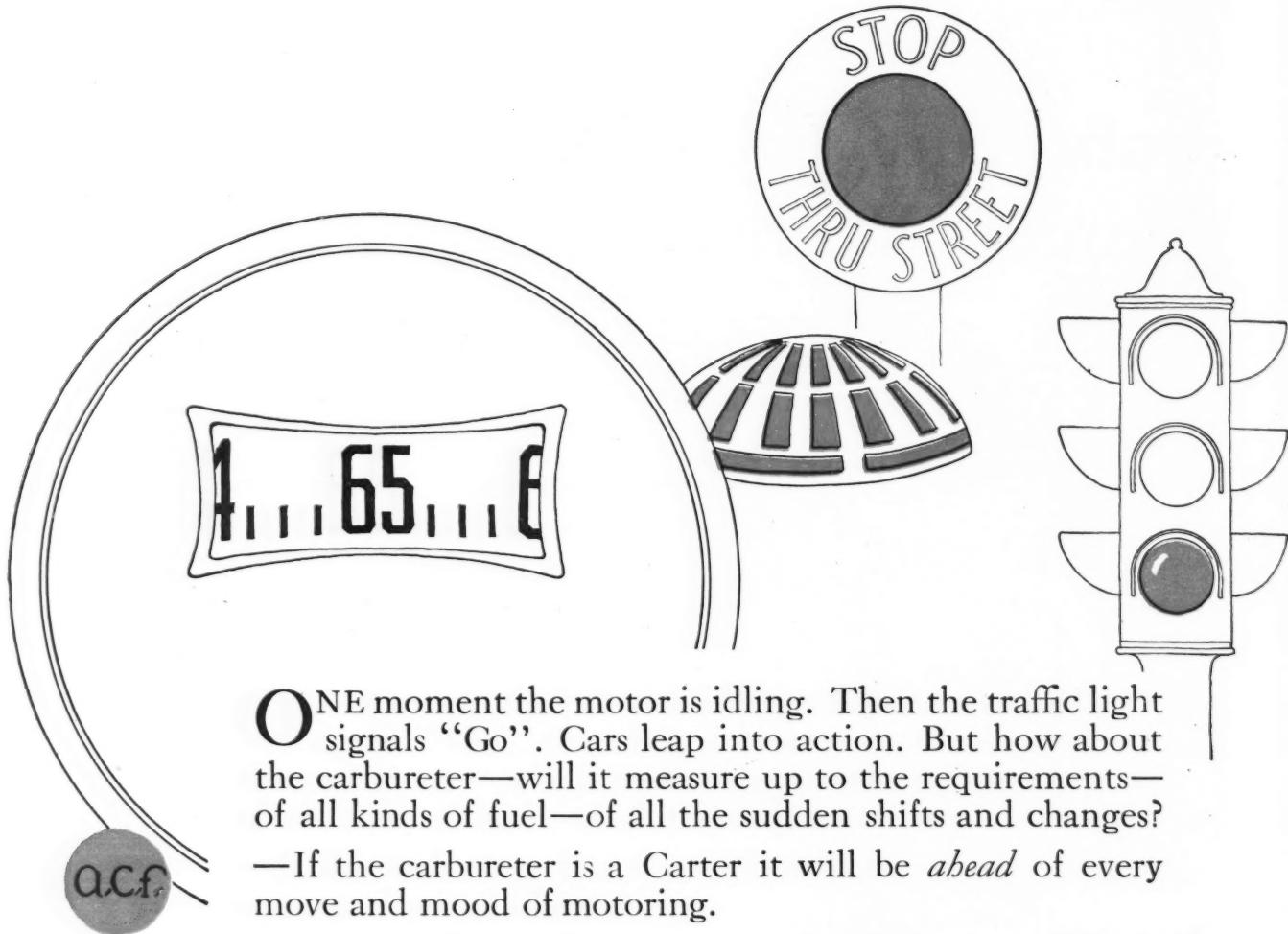
In either event the total efficiency of the electrical system is impaired and further

replacements of parts become necessary.

The only completely satisfactory parts for any electrical system are those that have been designed and manufactured to promote the proper functioning of that electrical system as a whole.

For greater safety, for greater goodwill from your customers, for greater profits and greater all-around satisfaction—use only genuine Delco-Remy service parts on Delco-Remy equipment!

DELCO-REMY CORPORATION, ANDERSON, INDIANA



ONE moment the motor is idling. Then the traffic light signals "Go". Cars leap into action. But how about the carburetor—will it measure up to the requirements—of all kinds of fuel—of all the sudden shifts and changes?

—If the carburetor is a Carter it will be *ahead* of every move and mood of motoring.

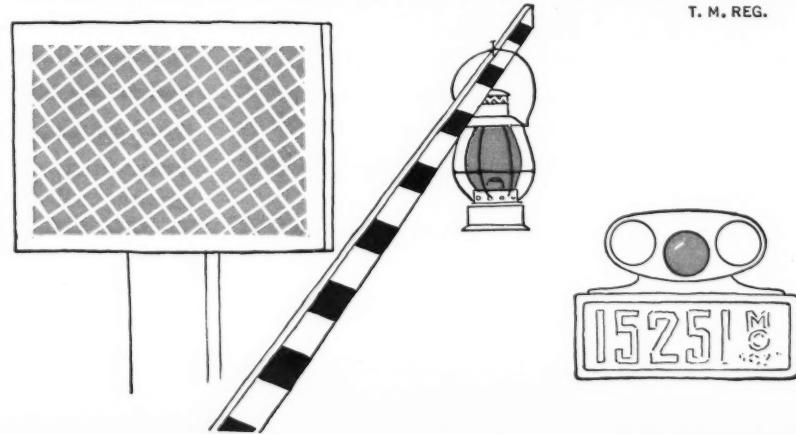
For Carter keeps ahead because the Carter principle is ahead, to start with. And Carter research, Carter practice, and Carter *purpose* are keeping Carter ahead in every phase of carburetion.

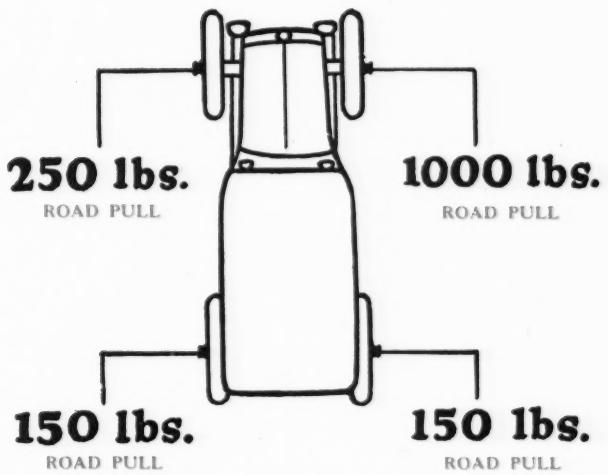
That is why Carter is far ahead in volume of standard equipment business.

CARTER CARBURETOR CORPORATION, SAINT LOUIS  
Division of American Car and Foundry Company

# CARBURETER

T. M. REG.





## A Real Brake Tester Versus a Mere Equalizer

These were actual brake readings  
on a Cowdrey Brake Tester.

No brake action except on the right  
front wheel.

Yet a mere equalizing machine  
would say that the two rear brakes  
were perfect—just because they  
were *equal!*

AND ONLY AT 15% OF  
CAPACITY!!

Cowdrey Brake Tester Organization, Inc.  
Fitchburg Massachusetts

## Kodaloid Grows Old Gracefully

Kodaloid (genuine Eastman Transparent Sheeting) comes as near to lasting the life of a car as any sheeting made, and in addition is ideal for curtain windows because of its unique strength, transparency, flexibility and freedom from color.

When you use Kodaloid you know there is nothing better.

*Fill out the coupon for a free sample*

Eastman Kodak Company

Chemical Sales Division

Rochester, N. Y.

Eastman Kodak Company  
355 State Street  
Rochester, N. Y.

Gentlemen:

Please send me a free sample of Kodaloid.

Name \_\_\_\_\_

Address \_\_\_\_\_

My Jobber is \_\_\_\_\_

Address \_\_\_\_\_

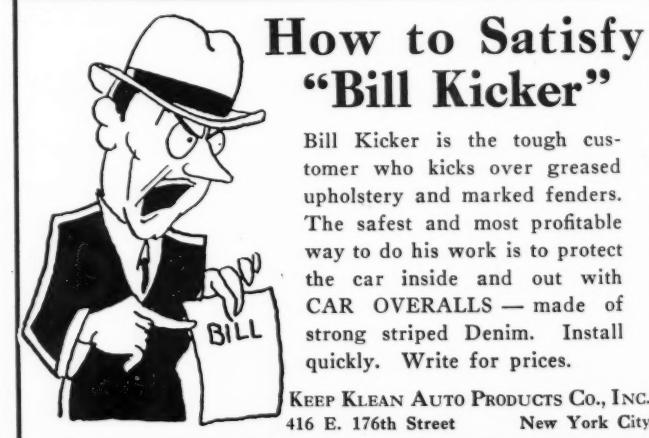
I use \_\_\_\_\_ sheets a year.



### Better Clutch Operation

Manufacturers of quality automobiles have learned by test that B. C. A. BALL BEARINGS give smoother clutch operation. Made in straight Thrust and Angular Contact Radial types, they are ideal for the *Throwout* position. Their scientific design and uniform strength mean greater satisfaction to the motorcar owner.

**Bearings Company of America**  
LANCASTER, PA. DETROIT MICH. OFFICE  
1012 FORD BLDG.





## Women Drivers Demand Comfort

Give it to them with the Adams Adjustable Foot Rest—The most comfortable and efficiently operating of all accelerator pedals.

*Easily installed—Specially recommended for latest models of*

BUICK CHEVROLET CHRYSLER DURANT PLYMOUTH  
FORD WHIPPET OAKLAND PONTIAC ESSEX

### 105 SENIOR

\$3.50 LIST

A DeLuxe Model with which it is possible to place the accelerator as much as six inches nearer the driver . . . also adjustable to length of foot, pitch and angle.

### 110 JUNIOR

Made of steel cadmium plated. A utility model listing at \$1.

*Order TODAY Through Your Jobber or Direct Giving Us His Name*

ADAMS MFG. COMPANY  
GALESBURG, ILLINOIS

## New ADAMS adjustable FOOT REST

PIONEER MAKERS OF FOOT RESTS

### FOLLETT'S

### NEW MODEL TIME STAMP

accounts for every labor minute



Prints the year, month, day, hour, minute, A.M. or P.M. at the exact moment the plunger is pressed—like this, for example:

NOV 19 1920 4 31 PM

Learn the interesting details from our descriptive data.

Follett Time Recording Co., 217 High Street, Newark, N.J.  
"Established Since 1904"

### UNIVERSAL SPRAY GUN

The Universal equips you to do spring lubrication, engine cleaning, painting, etc. You can add \$3 clear profit to your bill on every job.



\$12.00

### QUICK PROFITS

for garages, service stations and repair shops.

The Universal Spray oil, paint, cleaning liquid with equal efficiency. Air can be connected at either end of handle. New low price \$12.00. Write today.

ECONOMY MACHINE PRODUCTS CO.  
5213-14 Lawrence Ave.  
Chicago, Ill.



### Guaranteed

Two combination rings of special design with Expanders of finest Swedish steel. Guaranteed to seal cylinder and centralize pistons, eliminating oil pumping, piston slap and compression loss when properly installed. Write for details.

The Wel-Ever Piston Ring Co., Toledo, Ohio

### The Touring Season is Here

Be prepared to Equip your  
Customers' Cars with

### WATSON STABILATORS

John Warren Watson Co.

Philadelphia, Pa.

### DOVER SAVAL Liquid Oil Measures

Made of heavy steel, copper plated, highly polished and lacquered. A quality product. The universally known thumb operated valve control is simple, positive, and fool-proof. Spout flexibility means speed, service and satisfaction. A simple oil straining device assures clean, perfect oil—ALWAYS.



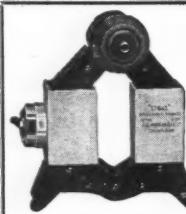
### DOVER MEASURES

with valve control and oil straining device, are made in 1-3-4 quart capacities.

Manufactured by

DOVER STAMPING & MFG. CO.  
CAMBRIDGE A. MASS.

Patented  
April 2,  
1918


**IDEAL ADJUSTABLE PORTABLE GROWLER**

A hinged device to test all armatures from 3/4" to 10" diam. Ideal Adjustable Growlers make the proper span eliminating core or slot shorts. Guaranteed satisfactory or money refunded. Get prices and sales offer.

**J. J. ANKENBRANDT**  
2140 WAKEMAN ST. TOLEDO, O.

# STANDITALL AUTO RADIATOR

You can make more money by replacements than repairs. "Standitall" cores will not burst from boiling or force from freezing. Will outlast the life of the car. Liberal offer for the wide-awake dealer. Investigate now.

**J. C. BLACK MFG. COMPANY, INC.**  
OIL CITY, PA.

# THE DURANT LINE

IS A BRILLIANT SUCCESS

**DURANT MOTORS, Inc.**

250 West 57th St., New York, N. Y.

Factories: Elizabeth, N. J.—Lansing, Mich.—Oakland, Cal.—Toronto, Canada

# SPEED UP YOUR TIRE SERVICE

The Elmes Booster Pump  
will raise the press platen  
**SEVEN TIMES AS FAST**  
as the Hydraulic Pressure Pump.

**THE TIRE DEALER SAYS**

"This small Investment Pays Big Dividends."  
Easily attached to any make of press.

The Charles F. Elmes Engineering Works, 230 N. Morgan St., Chicago

# Increase Your Repair Business With The HAMMETT MOTOR TESTER

**HAMMETT MFG. CO.**  
13th & Oak Sts., Kansas City, Mo.

# NEW! MOBILATOR NEW!

Automatic Starter Control

THE GREATEST AUTO DEVELOPMENT IN RECENT YEARS—  
just push in the clutch to start your motor. Write for  
particulars. **Distributors wanted.**

MOBILATOR CORP., 2816-333 N. Michigan Ave., Chicago

### The Hand Operated Brake Tester!

License Pat. No. 1264770  
Other Pats. Pending.

The patented Linendoll Auto Brake Tester gives all information necessary for equalizing brakes on any car or light truck! \$37.50 complete. Write us!

**THE NORWALK AUTO PARTS COMPANY**  
Norwalk, Ohio

Gen. Sales Office  
Real Estate Trust Bldg.  
Philadelphia, Pa.

Pedal Depressor  
No. 6 Locking Type

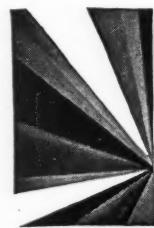
### A Bulwark of Protection

**BRIGHT BUMPER**

BETTER TO OWN BETTER TO SELL

THE WARREN TOOL & FORGE COMPANY  
500 GRISWOLD ST. - WARREN, OHIO, U. S. A.

A Beacon for the Highway



With the World to choose from  
they chose  
**HOUDAILLE**  
Hydraulic Double-Action  
SHOCK ABSORBERS  
for the ride  
HOUDAILLE ENGINEERING CORP., Buffalo, N.Y.



A waving red light is the universal danger signal. Here is a positive warning stop light, with positive profits. Write today for complete information.

**Model A-AA**  
for  
Passenger Cars

**ILER ELECTRICAL MFG. CO.**  
5103 Lakeside Avenue, Cleveland, Ohio

"If my Franklin Compressor ever  
does wear out, I'll buy another"

**Franklin**  
AIR COMPRESSOR CORPORATION  
Norristown, Pennsylvania

# MONOGRAM

Radiator Caps  
GEAR SHIFT BALLS, ORNAMENTS

THE KINGSLEY-MILLER COMPANY - CHICAGO

### NEW PRICES!

A new Dealers Net Exchange Price List for Fredericks Lyknu Rewinds is now ready. Free, together with The Fredericks Armature Application List—complete data on every armature since 1920. The Fredericks Jobber displays this sign.

H. M. FREDERICKS CO.  
LOCK HAVEN PENNA.

### AUTHORIZED ARMATURE

**Lyknu**  
by FREDERICKS  
EXCHANGE SERVICE

# LANDIS Shock Diffusers

Now Ready for  
**FRANKLIN, PACKARD, MARMON**  
**CHRYSLER IMP. 80, HUPMOBILE CEN. 8**

LANDIS ENG. & MFG. CO.  
AUTOMOTIVE DIV. WAYNESBORO, PENNA.

# R & R SUPER POWER CYLINDER HEADS

For Chevrolets and Racing Equipment

R & R MANUFACTURING CO.

CABLE ADDRESS RCO ANDERSON, INDIANA

### NEXT WEEK

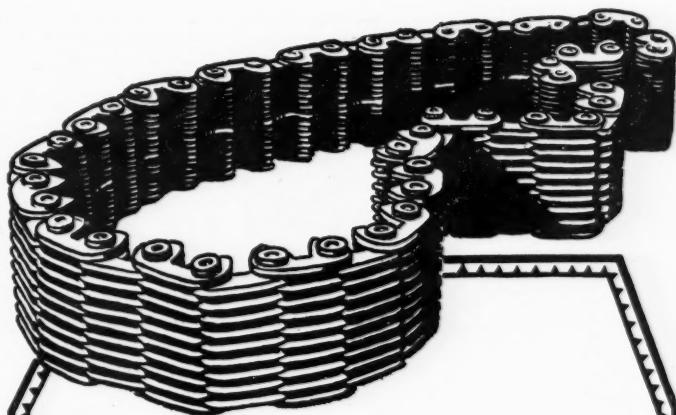
—is the time to read next week's issue of MOTOR AGE, as you are reading this week's issue this week

**MOTOR AGE**  
Chestnut and 56th Sts. Philadelphia, Pa.

## INDEX TO THE ADVERTISEMENTS

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## Sport Champions

of ring, diamond or grid-iron fame win their laurels not by sheer power but by the punch of

## Perfect Timing

The power-rating of the modern motorcar means nothing without perfect synchronism of pistons, valves and ignition, which is the function of the TIMING CHAIN.

Replace worn and noisy chains with "WHITNEYS." They are quiet, insure PERFECT TIMING and are usually good for the life of the motor—a profitable and satisfactory job.

*Ask your jobber or write  
for latest catalog and in-  
formation sheets*

**WHITNEY**  
SILENT TIMING  
**CHAINS**

**THE WHITNEY MFG. CO.**  
*Hartford, Connecticut*





## As Famous for Motor Cars as for Airplanes— **STROMBERG CARBURETORS**

Practically every major American aeroplane event has been achieved with engines equipped with Stromberg Carburetors—world famous for sensational performance.

Now the marvelous new VIS-A-GAS Syringe Stromberg Carburetor, especially developed to meet the needs of the modern motorist, will give the 1928 Ford, Chevrolet, Pontiac, Chrysler-52, Whippet and Durant equally thrilling feats of power, speed and acceleration, with unsurpassed economy and dependability.

The new patented syringe accelerator gets the car away like a shot and keeps it out in front.

The double idler enables one to go slowly with smooth, easy motor action.

The patented automatic economizer regulates the mixture to the last degree of perfection at all speeds and gives greatest possible gasoline economy.

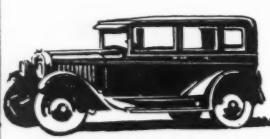
All water and dirt is thoroughly strained from the gasoline by the VIS-A-GAS, and the glass dome permits the motorist to see clearly the action of the fuel, thus avoiding many troublesome delays and annoyances.

Thousands of enthusiastic motorists everywhere are having these wonderful new instruments installed on their cars. Get your share of this valuable business by securing the Stromberg franchise NOW. A big advertising campaign for your benefit is appearing now in newspapers all over the country. Write today for particulars.

We have Stromberg Carburetors for all makes of cars.



FORD: Price \$17.50



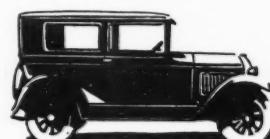
CHEVROLET: Price \$17.50



PONTIAC: Price \$17.50



CHRYSLER-52: Price \$17.50



WHIPPET: Price \$17.50



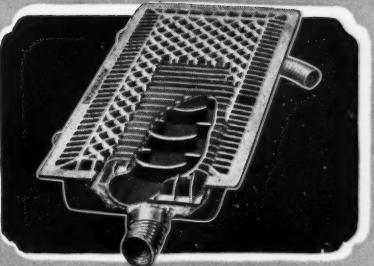
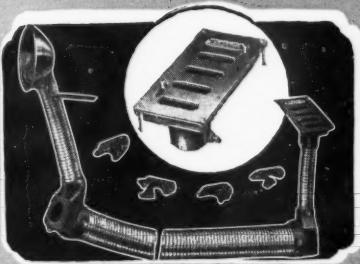
DURANT: Price \$17.50

All prices \$19.00  
West of Rockies

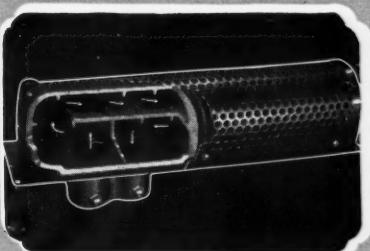
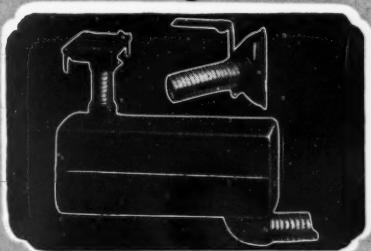
STROMBERG MOTOR DEVICES CO., 58 E. 25th Street, Chicago

# Who couldn't Make Money, with a Heater Line like this?

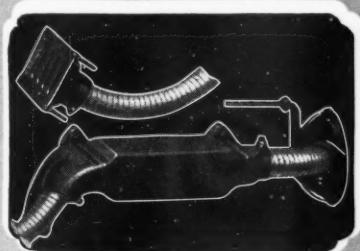
*and no  
Big Stock,  
to carry!*



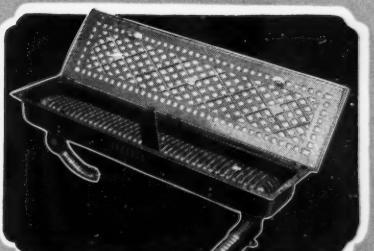
**Chanson  
Universal  
Hot Air  
Heater**  
MODEL A1  
FOR ALL CARS  
List  
**\$7.50**



**Chanson  
Universal  
Register Type  
Exhaust  
Heaters**  
MODEL 2F  
**\$15.00**  
MODEL 1F  
**\$20.00**

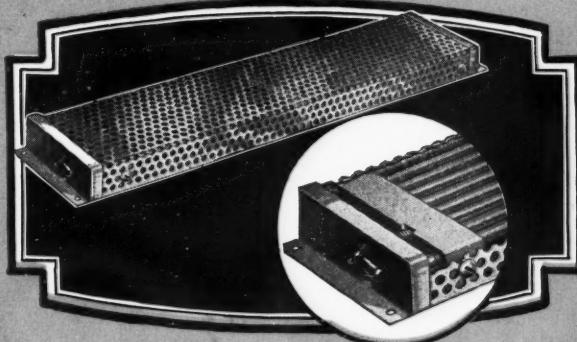


**Chanson  
New 1928  
Ford Special  
Hot Air  
Heater**  
MODEL A10  
List  
**\$6.50**



**Chanson  
Universal Rail  
or Toeboard  
Type Exhaust  
Heaters**  
MODEL RC14  
**\$10.00**  
MODEL RC25  
**\$17.50**

**Chanson New 1928  
Chevrolet Special  
Hot Air Heater**  
MODEL C28  
List  
**\$6.50**



**Chanson Universal  
De Luxe  
Exhaust Heaters**  
MODEL 4F  
**\$22.50**      MODEL 5F  
**\$30.00**



**Chanson Chevrolet-Essex  
Special Hot Air Heater**  
MODEL A9  
**\$6.50**



**Chanson  
Universal Hot Air Heater**  
List **\$6.50** MODEL  
A7

**CHANSON**  
(Reg. U. S. Pat. Off.)

**HEATERS FOR ALL CARS**

Manufactured by  
**CHANSON DIVISION, Illinois Iron & Bolt Company, Carpentersville, Ill.**

# CHRYSLER

## SALES SHOW

### TEN-FOLD INCREASE



CHRYSLER has been literally flooded with dealer orders, until today there are more than *ten times as many orders* as a year ago.

Read what some of the dealers have to say: "Results of one day's sales—prospects eighty-nine; demonstrations booked, twenty-seven; actual orders written, sixteen." "Orders for twelve cars in one day." "Seven signed orders today and can get twenty-eight more soon as promise definite delivery date." "Sold without demonstration, six cars today." "Sold 8 cars and

have orders for thirty-four more in forty-eight hours." Practically every dealer in the Chrysler ranks has a similar enthusiastic story to tell.

Such wonderful public acceptance has never before been given to a new car and Chrysler dealers everywhere are cashing in on this most remarkable tide of Chrysler popularity.

It is not too late for you also to enjoy this splendid popularity. A letter, wire or phone call will receive immediate attention from us. It will be treated confidentially.

